
Kootenay/Boundary Land Use Plan

Implementation Strategy

Kootenay Inter-Agency Management Committee

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Chapter 1 Introduction

1.1 The Regional Planning Process

The Kootenay/Boundary region in southeastern British Columbia has an extensive history of land and resources development and conservation and associated planning activity. Building on this past, and in response to escalating land use conflicts, the provincial government directed in 1992 that a strategic land use plan -- for the whole region -- be prepared to identify a comprehensive and integrated vision for regional land and resource use. A regional land use planning process was conducted in the Kootenays between January 1993 and June 1997. This Kootenay/Boundary Land Use Plan (KBLUP) Implementation Strategy consolidates the results of those planning efforts.

The regional planning process began in January 1993 when the British Columbia Commission on Resources and Environment (CORE) convened shared decision-making planning processes in the East Kootenay and the West Kootenay-Boundary areas. Planning Tables, comprised of representatives of key interests, worked collaboratively with government representatives until August 1994 to develop recommendations to the Commission on general land allocation, resource management practices and socio-economic transition measures. On the basis of those efforts, CORE submitted East Kootenay and West Kootenay-Boundary land use plan recommendations to the government in October 1994.

Following receipt of CORE's recommendations, the provincial government consulted directly with communities and interested parties in the region, and subsequently released the government's East Kootenay Land Use Plan and West Kootenay-Boundary Land Use Plan in March 1995. These announcements reflected significant government land allocation decisions -- notably decisions on designation of major new protected areas, special resource management zones, integrated resource management zones and preliminary enhanced resource management zones. The announcements also committed the government to a wide range of regional socio-economic initiatives, including measures to improve and match worker skills with new job opportunities, invest in improved productivity and rehabilitation of forest lands, grazing lands and watersheds, secure more employment in the value-added sector, invest in regional and community infrastructure, and to stimulate investment and employment in the tourism and small business sectors. The diversity of socio-economic strategies that were identified in the government decisions, as well as future strategic directions for socioeconomic development and planning in the region are described more fully in chapter 5.

The government's 1995 land use decisions also committed provincial agencies to further processes to refine the boundaries of the timber enhanced resource development zone, develop geographically-specific resource management objectives across the region, and provide the West Kootenay community of Revelstoke with the opportunity to advise on specific resource management guidance for the Revelstoke District. Accordingly, from August 1995 to

June 1997, work was undertaken to finalize those aspects, enabling development of the KBLUP Implementation Strategy. The work of the Minister's Advisory Committee in Revelstoke is anticipated to be complete in the fall of 1997.

1.2 Implementation Strategy Objectives

The main objectives of the provisions contained in this KBLUP Implementation Strategy are to:

- contribute to environmental, social and economic sustainability
- reduce the potential for disruptive land use conflicts
- help provide a secure and certain basis for long-term public and private planning and investment in resource management and community development
- integrate the March 1995 government KBLUP decision with the Forests Practices Code and other government strategic policy guidance dealing with land and resource management, such as the Provincial Grizzly Bear Conservation Strategy, emerging policy on managing mountain caribou and access, the Mineral Exploration Code, the Forest Sector Strategy, the Regional Biodiversity Benchmark Project, and the Invermere Enhanced Forest Management Pilot Project, as well as socioeconomic transition, and
- provide a strategic context and workable direction for more detailed, operational levels of land and resource planning and day-to-day administrative decision-making.

1.3 Plan and Implementation Strategy Scope

The KBLUP applies to all public lands and waters in the Kootenay/Boundary regional planning area, which corresponds with the Ministry of Forests' Nelson Forest region.

The plan does not contain prescriptive direction for privately owned land, although a number of the plan's objectives assume certain environmental and economic contributions from the region's relatively extensive proportions of private land.

Approved and adopted at the Cabinet level, the KBLUP and Implementation Strategy represents the corporate policy of the British Columbia government. Accordingly, all relevant provincial government agencies, in delivering their mandated responsibilities, are required to observe, comply with and implement the guidance contained in the plan. Responsibilities and mechanisms for KBLUP management and administration (including provisions for plan adoption, implementation, monitoring and reporting, interpretation and dispute resolution and plan amendment) are identified in chapter 6.

The appropriate provisions of the KBLUP and Implementation Strategy will be declared as a higher level plan pursuant to the *Forest Practices Code of British Columbia Act (1995)*, as a legal means of ensuring consistency between the strategic guidance contained in the KBLUP, including the Implementation Strategy, and strategic and operational plans under the Code that are subsequently prepared for forest management. Beyond providing strategic guidance to future lower level planning processes, the KBLUP and Implementation Strategy will also supply important land use and resource management guidance in the development and the day-to-day

administration of natural resources legislation, programs and policies, in evaluating future major project developments that are subject to the *Environmental Assessment Act* and will provide an overarching context for socio-economic planning initiatives.

1.4 Principles Applied in KBLUP Implementation Strategy Development

The KBLUP Implementation Strategy has been prepared on the basis of the following general principles. The KBLUP Implementation Strategy:

- is consistent with the government's KBLUP decision on land use and socio-economic development initiatives, announced in March 1995
- is consistent with government policy direction that the land and resource management objectives and strategies developed for geographically-specific application should not cause additional reductions to short-term timber supply availability, beyond the harvesting reductions already associated with the Chief Forester's 1994-96 AAC determinations for TSAs and TFLs, implementation of the Forest Practices Code (FPC), and implementation of government's protected area decisions
- is consistent with the Provincial Grizzly Bear Conservation Strategy and the draft Provincial Mountain Caribou Strategy, and emerging policy on access management and the Mineral Exploration Code
- builds on and integrates the extensive work done by the multi-party CORE Tables
- provides the appropriate nature and level of land and resource management guidance to enable the efficient and effective implementation of FPC, notably FPC requirements for operational forest and range planning, and
- respects the legal rights of existing land and resource tenure holders.

As a result of application of the above principles, the KBLUP Implementation Strategy represents a synthesis of current government policy on land and resource use planning and management, together with the results of over three years of intensive and participatory planning effort, to provide a comprehensive strategic vision for the Kootenay/Boundary region.

1.5 Land Use Designation Categories

A regional land use designation system defines broad categories of land use that are applied to different geographic areas. The purpose of designating land into these categories, as a product of the planning process, is to communicate the general management guidance for the lands and natural resources located within the designations.

The Kootenay/Boundary regional land use plan, announced in March 1995, allocated the Crown land base into four main land use designation categories, as shown on the regional land use Plan Map (Map 1). The land use designations span a continuum from conservation-oriented land uses (e.g., protected areas) to development-oriented land uses (e.g., enhanced resource development zone). The protected area designation provides relatively straightforward and prescriptive land

management guidance in the sense that these areas are classified as provincial or federal parks, wherein certain land uses (e.g., timber and mineral extraction) are prohibited by law or regulation.

The Plan's three other land use designation categories (special, integrated and enhanced zones) do not, in themselves, provide prescriptive land and resource management guidance. Instead, these designations indicate a general land/resource management intent and a comparative degree of emphasis of conservation-oriented or development-oriented land uses. The three land use designations, as shown on the regional Plan Map (Map 1), are the result of application of pre-defined land allocation criteria, as described below for each land use designation category

To be overly definitive in a strategic level plan of the specific land uses / activities that can or cannot occur, or the particular resource management standards that should or should not apply, in each of these three zones is neither feasible nor desirable, given the geographic variability of resource qualities and attributes throughout the zones, and the goal to optimize opportunities for all resource values to the extent possible, within an integrated resource management philosophy. The general mapping scale and the low resolution of information separation at this broad scale makes it inappropriate to adopt specific and detailed management strategies by zone categories. Instead, the KBLUP Implementation Strategy addresses the need to present sufficiently prescriptive land and resource management guidance through regional objectives and strategies (chapter 2), spatially referenced resource management guidelines for individual resource values (see chapter 3), and by supplementing the regional guidance and guidelines with statements of specific objectives and strategies for individual resource values within resource management zones in the planning area (see appendices 1-7).

Protected Area

The objective of this designation is to protect viable representative examples of natural diversity and special natural, cultural heritage and recreational features, consistent with the provincial protected area strategy. Land use within protected areas emphasizes resource conservation to the degree that resource extraction is excluded and other land uses may be limited or excluded. Land use and management within protected areas is guided by existing park master plans, or interim management direction statements which provide temporary management direction for new protected areas, pending development of comprehensive park master plans.

Prior to adoption of the Kootenay/Boundary regional land use plan in March 1995, approximately 9.14% of the region's land base was in protected area status. As a result of the KBLUP, this amount was increased to approximately 13.88% of the region. There are seventeen new protected areas which have, or will be, formally designated as class A provincial parks pursuant to the *BC Park Act*. A list of the region's new protected areas and a description of general management guidance for the new areas is described in chapter 4.

Special Resource Management Zone (SRMZ)

This land use designation was assigned to areas with high concentrations of regionally significant and sensitive resource values, such as critical fish and wildlife habitat, ecosystems that are under-

represented in the region's protected area system, important viewsapes, sensitive recreation areas and cultural heritage features. SRMZs communicate the general resource management priority to maintain the integrity of the numerous special and sensitive values that are known to exist in those areas. The specific locations of those resource values and corresponding management guidance for the resource values is identified in chapter 3 and in the appendices.

Resource development / extraction opportunities exist and are fully acceptable activities within the SRMZ designation, subject to the range of management objectives and strategies. However, compared to the IRMZ or ERDZ designations, resource development proposals within SRMZ areas may have more numerous conditions attached or greater consideration given due to the simple fact that a greater concentration of sensitive conservation-oriented values generally exist in SRMZ areas.

As indicated above, the KBLUP Implementation Strategy does not prescribe separate blanket policies, procedures or guidelines for resource exploration, development or use in the SRMZ designation. Rather land and resource management guidance, including guidance for SRMZ areas, is detailed in chapters 2 and 3 and the appendices (1-7).

Integrated Resource Management Zone (IRMZ)

The primary objective in the IRMZ designation is to balance environmental, economic and social benefits from the resource values within the zone. Resource management emphasis may vary throughout this designation, according to the distribution, availability and sensitivity of resource values. Chapter 3, through identification of resource management guidelines and cross-referencing to supporting resource value maps, and the plan appendices, identifies spacially specific resource management guidance in the IRMZ designation, to supplement the overall guidance provided by the regional objectives and strategies (chapter 2). Occupying the significant majority of the regional land base, lands in this designation supply extensive opportunities for most land use activities.

Enhanced Resource Development Zone (ERDZ)

Lands designated as ERDZ indicate the suitability or potential suitability of those lands for relatively intensive resource development activities, aimed primarily at regional economic development and community and work force stability. This land use designation is divided into two sub-categories: Coal ERDZs which signify a long-term, priority commitment of those areas to coal mining exploration and development; and Timber ERDZ, which signify the inherent suitability on those lands to undertake site-specific intensive forest management investigations and activities.

Stewardship of soil, water and air quality and areas of important environmental or recreational values (e.g., ungulate, fish, grizzly habitat, or recreational sites or features) that are located within the ERDZ designation is assured through application of FPC and other standard regulatory measures, including application of *Environmental Assessment Act* in the case of major, site-specific developments such as mining proposals.

Coal ERDZ -- This sub-category is located exclusively in the East Kootenays (concentrated in the Elk and Flathead river valleys). It encompasses areas of known coal reserves, existing coal mining facilities and infrastructure as well as areas for potential expansion. The Coal ERDZ designation signifies an assurance of long-term security of access and tenures to these lands for coal mining exploration and development purposes, contributing to investor confidence and general coal industry viability. Within the Coal ERDZs it is recognized that ecosystem function may be temporarily compromised by coal exploration, development, production or use activities on these lands. However, long term maintenance of environmental quality of all areas impacted will be addressed through innovative reclamation and mitigation technologies as determined through the permitting processes.

Timber ERDZ -- This sub-category is located on Crown lands and private TFL lands and is intended to balance constraints on timber harvesting resulting from objectives, strategies and guidelines for sensitive environmental and social values. Timber ERDZs have:

- average and above timber capability, and
- few intrinsic limitations to timber management (such as compaction hazard, slope instability or sedimentation risk), and
- an absence of regionally significant conservation values (such as provincially and/or regionally significant caribou habitat, high and intermediate biodiversity emphases, regional biodiversity connectivity corridors, community watersheds and regionally significant visual values), and limited ungulate winter range and grizzly bear habitat in that key areas for such values have been excluded.

Given these criteria that were used to identify the Timber ERDZ designation, it is evident that these lands possess comparatively high inherent potential for timber management activities, of the nature described in the Guidelines for Management of Enhanced Resource Development Zones (see chapter 3).

The Timber ERDZ areas are shown on Map 3.11, chapter 3, and indicates that site specific, intensive timber management activities are not necessarily limited to the ERDZ designation category - (just as site-specific opportunities for conservation-oriented management are not necessarily limited to the SRMZ category). Site-specific intensive timber management opportunities will also be located within IRMZ areas, and even in some locations within the SRMZ designation, depending on local circumstances. Lands within the Timber ERDZ areas do, however, represent priority areas for investigation of intensive timber management opportunities, given their general suitability for such activities.

Private Land

The privately owned land is primarily used for compact and dispersed residential, agricultural, private forestry, commercial, industrial, utility, transportation and institutional purposes. Settlement oriented uses on these lands are planned and regulated by local governments under authority of the *Municipal Act*.

Chapter 2 General Resource Management Direction

The following regional objectives and strategies apply to all Crown land and natural resources, as well as private land within Tree Farm Licenses, in the Kootenay/Boundary region unless otherwise indicated. Given that certain resource activities (e.g., logging and mining) are not permitted in provincial parks, some of the regional objectives and strategies will only apply to Crown land outside of protected areas. However, it is necessary to cooperatively manage values both within the parks and the adjacent areas to ensure that parks can effectively protect the sensitive values contained within them. Therefore, appropriate regional objectives and strategies, particularly those associated with environmental, recreation and tourism values, will be incorporated in the management of parks (see Chapter 4).

The regional objectives and strategies are intended to provide broad, corporate guidance to agencies and resource users for managing the environmental, social and economic resources in the region and to guide agencies in the development of their individual and inter-agency program priorities.

Within some of the regional strategies, a regional target is provided, indicating a desirable or plausible resource production output, resource allocation amount, or a timeline within which the strategy is intended to be initiated or completed. Targets, where provided, represent approximate outcomes which are considered feasible. They should not, however, be interpreted as binding on the authority of statutory decision-makers to exercise their discretion in making resource management and administrative decisions for which they are responsible. **Where regional level targets are *not* provided within individual regional resource strategy statements, it is intended that the strategy will be implemented in an integrated manner, recognizing and considering the stated objectives, strategies and targets for other resource values.**

Some of the terminology used to describe regional objectives and strategies is relatively subjective and open to interpretation. Definitions of key terms are, therefore, provided in the glossary to promote consistent interpretation of the intent of regional strategies and objectives. It is recognized that a technical working glossary will need to evolve over time as issues surface in delivering the KBLUP Implementation Strategy.

Implementation of the regional objectives and strategies is intended to occur over time, in general conformance with the workplan to be developed annually by the Kootenay IAMC (see Chapter 6, section 6.2) through the annual budget development process.

ECONOMIC VALUES

A. TIMBER RESOURCES	
<p>1. Maintain a sustainable, secure, long-term timber supply.</p>	<p>1.1 The Provincial Forest Land Commission will maintain and manage the Forest Land Reserve designation over an area covering approximately ± 6.5 million hectares of productive forest land in the region, in accordance with the provisions of the <i>Forest Land Reserve Act</i>.</p> <p>1.2 Subject to the range of objectives and strategies identified in this plan, specific strategies will be identified within the Forest Land Reserve, and especially within the ERDZ (T) for maintaining and increasing the regional land base that is available for timber management and supply.</p> <p>1.3 Timber management activities will be recognized as appropriate land uses in all resource zones, outside of protected areas, while respecting other values.</p>
<p>2. Ensure the availability of the short term timber supply.</p>	<p>2.1 Strive to achieve a minimum of two years of approved wood under cutting permits for all forest licensee tenure holders every year following plan approval. Develop a monitoring plan that facilitates corrective action.</p> <p>2.2 Develop spatially explicit long term harvesting plans (20 years).</p>
<p>3. Consistent with the objectives and strategies within this plan, maximize the sustainable supply of timber for harvesting.</p>	<p>3.1 An inventory of timber resources will be improved and coordinated with other resource value inventories, consistent with evolving Ministry of Forests inventory standards.</p> <p>3.2 A timber management strategy will be developed and implemented to mitigate the predicted falldown in the annual timber harvest levels that will occur over the short to midterm. The regional timber management strategy will be delivered through a combination of administrative structures, and will focus on:</p> <ul style="list-style-type: none"> • silviculture systems and activities • restoration of damaged watersheds • rehabilitation of previously disturbed forest land (i.e., roads and landings) • research into harvesting techniques, estate modelling, non-recoverable losses, etc. • forest inventories

	<p>3.2.1 A portion of the Invermere Forest District “Enhanced Forest Management Pilot Project” will operationally examine the timber management strategy in addition to other forest management objectives as per the summary of the terms of reference in Appendix 5--Invermere Forest District.</p> <p>3.3 The timber management strategy will guide future funding allocation within the enhanced forestry program of Forest Renewal B.C.</p> <p>3.4 Timber management activities will be emphasized through use of the Timber Enhanced Resource Development Guidelines in appropriate areas initially within Enhanced Timber Resource Development Zones (Timber) (Chapter 3, section 3.11), with a view to increasing the allowable annual timber harvests while meeting the biodiversity emphasis assigned for that landscape unit. Further work will be undertaken to finalize suitable areas and ERDZ(t) boundaries.</p> <p>3.5 Reasonable and attainable maximum acceptable annual fire loss objectives and reasonable and attainable annual pest damage objectives will be established.</p> <p>3.6 In the short term (5-10 years) the KBLUP Implementation Strategy will deliver between 4.7 and 5.2 million cubic metres of timber annually. The higher end of this range will be attained if agencies, industry and other key groups succeed in adjusting to the challenge of meeting the intent of the various objectives, strategies and guidelines, including for ERDZ (t). This timber target may need to be modified due to implementation of related initiatives in the Job and Timber Accord. Also, the timber target may not equate to future AACs as the Chief Forester retains the sole responsibility for such determinations and may choose a different allowable harvest level.</p>
<p>4. Increase value-added employment in the timber sector.</p>	<p>4.1 The long-term potential of value-added manufacturing will be promoted through the development and implementation of proven timber quality objectives and strategies for specific ecosystem types.</p> <p>4.2 The value-added wood manufacturing sector will be expanded through a variety of initiatives, including revisions to the Small Business Bid Proposal sale criteria and pilot of a small scale salvage program in the Arrow Forest District.</p>

	<p>4.3 The Kootenay WoodVine will be supported as an organization that encourages communication among value-added producers and promotes cooperative marketing, training and business support.</p> <p>4.4 Efforts will be made to promote capturing the highest value from forest stands for all timber products (plywood, clear lumber, pulp, fine grained material, etc.).</p>
<p>5. Manage the timber resources in accordance with integrated resource management principles and practices.</p>	<p>5.1 The responsible agencies will implement and administer the provisions of the <i>Forest Practices Code of British Columbia Act</i>, and associated regulations and guidebooks, as a primary means of ensuring the sustainable management of all forest resource values and ecosystems.</p> <p>5.2 To facilitate FPC implementation, a regional landscape unit planning strategy, which identifies a schedule for finalization of landscape unit boundaries and objectives, will be prepared by October 31, 1997.</p>
<p>6. Increase opportunities for alternative forestry operations.</p>	<p>6.1 Where economically feasible and ecologically appropriate, sensitive, innovative and labour-intensive approaches to timber harvesting and silviculture will be promoted.</p> <p>6.2 The number of woodlots within the region will be increased by 47. Efforts will be made to locate new woodlots in close proximity to communities who have expressed interest in the woodlot program. Location and management of all woodlots will consider the range of objectives and strategies in this plan.</p> <p>6.3 Opportunities for reducing, reusing or recycling wood residue and/or utilizing its energy value will be explored.</p> <p>6.4 Where necessary, existing woodlots (established prior to June 1997) may be exempted from the seral requirements of the Forest Practices Code Biodiversity Guidebook. Where exemptions have been granted and old growth must be conserved, consider partial cutting of old growth (i.e., no requirement for interior conditions).</p>
<p>7. Maintain a viable Christmas tree industry while ensuring integration with other resource values and users.</p>	<p>7.1 The Christmas tree industry will be supported by enhancing the management intensity and investment opportunities on existing tenures and considering innovative production techniques, (e.g., Christmas tree harvesting as part of the silviculture spacing program and ecosystem restoration).</p>

	<p>7.2 The Christmas tree program will be reviewed to ensure Christmas tree production is maintained or increased. For new and existing Christmas tree permits this objective will be achieved by concentrating intensive management on the most suitable sites within the permit area.</p> <p>7.3 Christmas tree culture plans, which will include rangeland and wildlife habitat values and ecosystem restoration, will be developed and implemented.</p> <p>7.4 To address long term certainty, maintain the number hectares available for Christmas tree production but rationalize location and the Christmas tree culture plan to be more consistent with the objectives and strategies in this plan. New opportunities on Balsam/Spruce sites will be reviewed for potential subalpine fir production.</p>
B. ENERGY RESOURCES	
<p>8. Maintain opportunities for access to Crown land for potential development of oil and gas, geothermal resources and other energy-related projects.</p>	<p>8.1 Opportunities for energy resource exploration and development will be made available on all lands outside of protected areas, subject to standard regulatory approval processes and conditions and in accordance with the range of KBLUP objectives and strategies.</p> <p>8.2 Access to Crown land for energy exploration and development will be undertaken in conformance with the Oil and Gas Handbook and Guidelines, with a requirement for access development to demonstrate sensitivity to environmental, visual and recreational values, where these have been identified.</p> <p>8.3 Lower level strategic planning processes will be provided with appropriate information on oil and gas and geothermal resource values, and other energy related projects, to ensure the integration of energy resource interests into the planning results.</p>
<p>9. Encourage development of regional energy resources to provide local employment and investment.</p>	<p>9.1 The Ministry of Employment and Investment (Energy and Minerals Division) will support geological surveys and research, by industry, on subsurface resources.</p>
C. MINERAL AND COAL RESOURCES	
<p>10. Maintain a healthy investment</p>	<p>10.1 Opportunities for mineral and coal tenure acquisition,</p>

<p>climate to promote exploration and development of new mining opportunities.</p>	<p>exploration, development and mining, including access development to those tenures, will be maintained on all lands outside of protected areas.</p> <p>10.1.1 These same opportunities will be maintained for placer resources on all Designated Placer lands.</p> <p>10.2 The Arrow Forest District Road Deactivation Pilot Project will be reviewed and amended as necessary, with the goal of developing and implementing a road deactivation consultation strategy throughout the region.</p> <p>10.3 Existing “no staking” and “conditional” mineral, coal and placer reserves will be reviewed with the Kootenay IAMC with a view to amending or cancelling unnecessary or redundant reserves.</p> <p>10.4 The coal, mineral and placer exploration and development permitting process will be streamlined through multi-agency protocols and Memorandums of Understanding.</p> <p>10.5 Technical data and information will be provided to the exploration industry to promote new mineral and coal opportunities (e.g., industrial minerals and value-added technology).</p>
<p>11. Enhance security for the coal mining industry and associated communities.</p>	<p>11.1 Coal-bearing and adjacent lands that support existing coal mining operations, and most lands containing short to mid-term coal resource needs, are designated as Enhanced Resource Development Zones (Coal).</p> <p>11.1.1 Management emphasis in Coal ERDZs will be on coal mining and all related activities, in order to ensure long term regional and provincial economic benefits from the coal industry.</p> <p>11.1.2 Within the Coal ERDZs it is recognized that ecosystem function may be temporarily compromised by coal exploration, development, production or use activities on these lands. However, long term maintenance of environmental quality of all areas impacted will be addressed through innovative reclamation and mitigation technologies as determined through the permitting processes.</p> <p>11.2 Coal-bearing lands outside of Enhanced Resource Development Zones (Coal) are located within Integrated Resource Management Zones.</p>

<p>12. Ensure sound, responsible management of mineral, coal and placer resources.</p>	<p>12.1 All mineral, coal and placer activities will be subject to standard regulatory approval procedures and conditions, including, in the case of major mining proposals, the <i>Environmental Assessment Act and Regulations</i></p> <p>12.1.1 Approval conditions, including bonding, will ensure required reclamation of disturbed sites is completed.</p>
<p>D. AGRICULTURE</p>	
<p>13. Maintain or enhance the current level of grazing activity.</p>	<p>13.1 Grazing will be considered an appropriate Crown land use, subject to the terms and conditions identified in approved grazing tenures and range use plans and consistent with KBLUP objectives and strategies. Current grazing tenures in protected areas will continue and are transferable.</p> <p>13.2 Livestock AUMs on Crown land in the Kootenay/Boundary region will be maintained at approximately 85,000. Maintaining this level is conditional on implementation of the Fire-Maintained Ecosystem Restoration Guidelines, the presence of local Coordinated Resource Management Planning or its equivalent, the continued presence of the Grazing Enhancement Fund, and continued access to silvicultural grazing. Livestock increases may occur when forage enhancements increase the sustainable carrying capacity, wildlife interests are met, and Rangeland Ecosystems principles (Sections 53-57) are adhered to.</p> <p>13.3 Fire maintained ecosystem restoration projects will be implemented in NDT4 areas (see Chapter 3, section 3.10).</p> <p>13.4 Sites with high forage production potential within the Crown Agricultural Land Reserve (ALR) will be considered a priority for forage production enhancement and livestock use, while maintaining habitat and natural grassland integrity.</p> <p>13.5 The Grazing Enhancement Fund will be utilized to help achieve the agriculture and rangeland objectives of this plan.</p> <p>13.6 Ensure integrated and coordinated resource management planning at the local operational level.</p>
<p>14. Integrate grazing objectives with operational timber management activities.</p>	<p>14.1. A process will be developed for contacting range tenure holders operating within the Plan area to ensure optimum integration of timber harvesting and grazing</p>

	<p>objectives as stated in Range Use Plans and Silviculture Plans. Where appropriate, Silviculture Plans will detail specific measures to avoid livestock-related plantation damage and the breaching of natural or manmade barriers to livestock movement. Range Use Plans that encompass timber harvesting areas must also detail methods to minimize livestock damage to tree seedlings.</p> <p>14.2 An operational trial will be initiated to explore the potential for improved timber/grazing integration.</p>
<p>15. Provide opportunities for existing farmers to improve the viability of agricultural operations through expansion onto arable Crown land.</p>	<p>15.1 Arable lands within the Agriculture Land Reserve (ALR) will continue to be available through application under the <i>Land Act</i> in accordance with extensive agriculture and intensive agriculture policies administered by BC Lands. In accordance with government direction, agriculture use will receive priority emphasis for those lands within the ALR.</p> <p>15.1.1 The policy guidelines of BC Lands relating to land alienation for agriculture will be reviewed with a view to ensuring appropriate agriculture opportunities result. Criteria will be established for:</p> <ul style="list-style-type: none"> • defining agricultural land suitability • conservation and mitigation strategies • referral processes • approval mechanisms • multi-agency involvement in development plans
<p>16. Maintain opportunities for water allocation for agricultural uses.</p>	<p>16.1 Lower level strategic planning processes will be provided with appropriate information on agricultural uses of water to ensure such needs are integrated with other land and resource activities.</p>
<p>17. Reduce agriculture/wildlife conflicts.</p>	<p>17.1 Partnerships aimed at benefiting both wildlife and agriculture will be promoted between the agriculture industry and wildlife managers.</p> <p>17.2 The province will continue to support wildlife-agriculture conflict resolution forums.</p> <p>17.3 Wildlife population and habitat enhancement proposals will consider potential impacts on the agricultural sector. Similarly, livestock AUM increase and forage enhancement proposals will consider potential impacts on the wildlife resource.</p>
<p>18. Provide increased economic</p>	<p>18.1 A niche agricultural study will be undertaken to</p>

<p>opportunities within the agricultural sector.</p>	<p>evaluate potential opportunities for expansion of economic benefits from the agriculture sector. Similar studies for new agricultural opportunities will be promoted.</p>
<p>E. Fish and Wildlife Resources</p>	
<p>19. Maintain sustainable and harvestable populations of fish and wildlife to provide long term and sustainable economic benefits to the region.</p>	<p>19.1 An annual harvest of big game species and sport fish species will be maintained sufficient to provide fishing and hunting opportunities first for residents and secondly for non-residents. The Provincial Wildlife Harvest Strategy will guide the regulation setting process.</p> <p>19.2 Maintain inventories of fish and wildlife sufficient to calculate annual allowable harvests (AAH) that are ecologically sustainable and will not threaten harvest species.</p> <p>19.3 Encourage service industries that support fishing and hunting and provide them with input to and information about regulations.</p> <p>19.4 Encourage economic return from hunting/fishing activities by maintaining these activities over as large a percentage of the Crown land base as possible in order to provide a quality wilderness hunting/fishing experience and avoid overcrowding and associated problems.</p>
<p>20. Maintain a viable guide outfitting industry to service both resident and non-resident hunters.</p>	<p>20.1 Maintain populations of big game animals sufficient to provide ecologically sustainable populations and to maintain a commercial harvest.</p> <p>20.2 Maintain the largest percentage of the annual allowable harvest (AAH) for resident hunters.</p> <p>20.3 Maintain a percentage of the AAH for commercial use consistent with ensuring the viability of the industry.</p> <p>20.4 Maintain the present tenure system for licensing of guide outfitters to both provide certainty for the industry and ensure sustainable distribution of activity across the land base.</p>
	<p>20.5 Provide the industry with sufficient information in a timely fashion to allow planning.</p>
<p>21. Ensure a viable angling guide industry to service both resident and non-resident anglers.</p>	<p>21.1 Maintain populations of popular sport fish species and age classes to provide for a viable angling guide industry consistent with the Fisheries Program Strategic Plan.</p> <p>21.2 Classify and allocate fishing demand on those water</p>

	<p>bodies that become overcrowded and require regulation.</p> <p>21.3 Encourage industries that service sport fishing.</p>
E. COMMERCIAL TOURISM	
<p>22. Planning and design of timber harvesting, forest management, and mineral exploration should consider affected tourism businesses and the resource needs of those businesses.</p>	<p>22.1 Planning and resource allocation decisions should consider tourism uses of Crown land and resources. These uses include visible landscape, tenures and licenses, and recreational infrastructure such as trails, campsites and roads.</p> <p>22.2 Government agencies will work with tourism businesses holding Crown land tenures to identify areas of importance and resource management issues that should be considered in operational planning for logging and mineral exploration in tenured areas.</p>
<p>23. Planning and resource allocation decisions should regard commercial recreation as a valid and appropriate use of Crown land, subject to conformance with legislation and policy.</p>	<p>23.1 Plans should identify areas with substantial potential to support commercial recreation on Crown land.</p> <p>23.2 Substantial proposals to allocate tenure or title to Crown land for commercial recreation will be referred to affected agencies and evaluated with consideration to issues including the following:</p> <ul style="list-style-type: none"> • regional biodiversity connectivity corridors • wildlife habitat and conservation • recreation • other existing and potential resource uses • other provincial, regional, and municipal plans
<p>24. Where consistent with laws, policy and plans, provincial parks should provide opportunities for commercial tourism.</p>	<p>24.1 Existing commercial recreation uses (including heli-ski, heli-hiking and cat skiing operations) in provincial parks are acceptable, subject to compliance with management direction statements and park master plans.</p> <p>24.2 Provincial park planning processes should examine potential commercial recreation opportunities within provincial parks.</p>
F. SETTLEMENT, UTILITY & COMMUNICATION USES OF CROWN LAND	
<p>25. Maintain opportunities for settlement, utility, communication, and other site-specific uses of Crown land.</p>	<p>25.1 In response to individual proposals, or through proactive marketing methods, suitable Crown land parcels will continue to be allocated for settlement, utility, communication, access, cultivation, industrial uses, etc. Allocation of lands for settlement use should take into consideration the objectives defined in the Regional section 942.11 (Subsection 2) of the Growth Strategy legislation</p>

	<p>(Appendix A within this chapter) as well as regional district land use bylaws and official community plans and municipal plans.</p> <p>25.2 The allocation of Crown Land for settlement purposes will primarily, although not exclusively, be delivered from Crown lands within municipal boundaries, regional district official community plan areas and settlement corridors (Chapter 3, section 3.13).</p> <p>25.3 Provincial agencies will, as appropriate, participate in official community planning processes and regional growth management strategies initiated by local governments, to ensure that appropriate information on Crown land suitability for settlement and settlement-related purposes is incorporated.</p> <p>25.3.1 Participation in growth management strategies, official community plans and rural land use bylaws will emphasize a proactive approach for integrating settlement with the full range of land use activities.</p> <p>25.4 Lower level strategic plans may, where appropriate, also identify areas capable and suitable for settlement opportunities.</p>
<p>26. Recognize environmental conservation and other land use and resource management objectives when making decisions on the disposition of Crown land for settlement and other purposes.</p>	<p>26.1 Proposals for allocating Crown land for settlement purposes will be reviewed on an integrated coordinated basis with other interested agencies. Where possible, allocations will be directed away from regional significant environmental or resource values, such as biodiversity connectivity corridors, key wildlife habitats and high capability agricultural lands or forest lands and areas of high mineral values or interests.</p> <p>26.1.1 A coordinated approach to siting utility/transportation corridors will be promoted, particularly within regional biodiversity connectivity corridors, to minimize linear barriers to ecological values.</p> <p>26.2 The siting of new landfills will respect the management requirements for wildlife (particularly wide ranging carnivores such as black and grizzly bears), water quality protection and the need to minimize the impacts of scavenger species in critical winter ranges and marshes.</p>
<p>G. ACCESS PLANNING AND MANAGEMENT</p>	
<p>27. Provide access, including</p>	<p>27.1 Access for resource uses will be accommodated on all</p>

roads, to accommodate commercial resource assessment, exploration and development.	lands outside of protected areas, subject to the range of KBLUP objectives and strategies and other applicable government statutes and policies.
28. Prevent or reduce conflicts between resource access developments and sensitive environmental, recreational and cultural heritage resource values and areas.	<p>28.1 Access for commercial resource exploration, development and use activities will be subject to the identification and implementation of management measures to mitigate undesirable effects of such activities on other sensitive resource values and areas.</p> <p>28.2 An access map will be produced over time for each Forest District to identify access opportunities and restrictions for both public and industry uses of the provincial land base.</p> <p>28.3 Legislative and policy tools will be developed to manage both economic and recreational use of roads and bridges.</p>
29. Address area-specific access related issues.	<p>29.1 In the absence of comprehensive lower level strategic planning, the level of acceptable access will be assessed via a joint inter-agency process. Where no inter-agency consensus is attained, the regional dispute resolution process will be enacted.</p> <p>29.2 Priority areas that are recognized as requiring an enhanced referral process and greater consideration for meeting the KBLUP management objectives and strategies, are identified through the Resource Management Zone objectives and strategies (Appendices 1 - 7). The process for addressing access requirements in such areas is summarized in the Access Management Guidelines, Chapter 3, section 3.12.</p> <p>29.2.1 The list of priority areas for addressing access requirements will be reviewed annually and amended as necessary. A revised list will be identified in the annual report -- see Chapter 6, section 6.6.</p> <p>29.2.2 Future priority areas to address access management issues will be evaluated and determined on the basis of screening criteria, including:</p> <ul style="list-style-type: none"> • public expectations • degree of resource and conservation sensitivity and potential conflict • existing access • level of past investment into resource assessment/exploration/development • imminent or urgent resource development

	<ul style="list-style-type: none"> • availability/accuracy of information/inventory on resource values <p>29.3 A database will be maintained for all roads to enable the calculation of existing and future road densities. Ministry of Forests will conduct a pilot project in the Invermere Forest District.</p> <p>29.4 Lower level strategic planning exercises that address access management issues will be conducted on a cooperative, inter-agency basis and be based on the Access Management Guidelines (Chapter 3, section 3.12).</p>
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SOCIAL VALUES

<p>A. CULTURAL HERITAGE RESOURCES</p>	
<p>30. Conserve select cultural heritage resources.</p>	<p>30.1 Archaeological and cultural heritage resource assessments will be undertaken in accordance with legislation and policy respecting the management of such resources. (i.e., a new protocol agreement between Ministry of Small Business Tourism and Culture and Ministry of Forests respecting cultural heritage resource management, the BC Archaeological Impact Assessment Guidelines - 2395, the <i>Heritage Conservation Act</i>, the <i>Environmental Assessment Act</i>, and the <i>Forest Practices Code of British Columbia Act</i>, especially the <i>Forest Planning Regulation</i>.</p> <p>30.2 Archaeological overview assessments will be conducted, where appropriate, to assess cultural resource potential, in order to provide input into subsequent planning at both the strategic and operational levels.</p> <p>30.3 Archaeological impact assessments will be undertaken and appropriate impact management measures (i.e., buffering, avoidance, access controls, signage, mitigation) will be applied as required, in response to requirements identified through Archaeological Overview Assessments, land/resource planning processes, implementation of the provincial <i>Environmental Assessment Act</i>, and to development proposals referred to the Archaeology Branch, Ministry of Small Business Tourism and Culture, by the public or private sectors. In the interim, Archaeological Impact Assessments will focus</p>

	<p>on high potential sites as defined by Archaeological Overview Assessments.</p> <p>30.4 Government will continue to support the Traditional Use Site Inventory study process. Archaeological Overview Assessments will be complemented by the results of the Traditional Use Inventory.</p> <p>30.5 Aboriginal traditional use sites will, as appropriate, be designated as provincial heritage sites under the <i>Heritage Conservation Act</i>.</p> <p>30.6 The Heritage Branch, Ministry of Small Business, Tourism and Culture, will cooperate with appropriate municipal governments, agencies and interest groups to identify and conserve appropriate historic sites, trails, buildings and other structures through designation under the <i>Heritage Conservation Act</i>.</p> <p>30.7 The locations of known cultural heritage sites will be identified on appropriate government reference maps as map notations except those recognized as confidential.</p>
<p>31. Ensure aboriginal rights are not unjustifiably infringed upon by resource development activities of the Crown or its licensees.</p>	<p>31.1 Consultation with First Nations, as per government policy, will be undertaken for resource management activities which directly affect traditional territories.</p>
<p>32. Encourage development of cultural heritage interpretative facilities and programs.</p>	<p>32.1 Opportunities for the development of interpretative facilities and programs will be assessed in cooperation with First Nations and local governments.</p> <p>32.2 Lower level strategic planning processes will consider signage to identify sites as significant cultural heritage features, and to guide visitor use.</p>
<p>B. COMMUNITIES</p>	
<p>33. Integrate community objectives into Crown land and natural resources planning and decision-making.</p>	<p>33.1 Crown land and resource planning and decision-making processes will identify measures to minimize and mitigate impacts on communities that may be potentially affected by land and resource allocation and management decisions. Economic diversification and community support initiatives will be emphasized where resource dependent communities are experiencing impacts requiring a transition strategy to be implemented.</p> <p>33.2 Community stability will be enhanced over the next decade through adoption of landscape level plans which will contribute to the certainty of the timber supply and will address site-specific issues for access for a range of</p>

	<p>resource activities and development.</p> <p>33.3 Development of solid and liquid waste management plans will be promoted as part of watershed management planning processes for community and domestic watersheds.</p>
<p>34. Maintain or enhance employment opportunities and provide economic and social transition measures where needed to maintain community stability.</p>	<p>34.1 Appropriate government agencies will collaborate with communities and private industry in planning and delivering economic and social development programs and initiatives (e.g., Forest Renewal BC, the Grazing Enhancement Fund, the Canada/BC Infrastructure Program, and the BC 21 program.)</p> <p>34.2 As part of the BC Skills Now program, Community Skills Centers will be established and maintained.</p>
<p>35. Minimize risk to lives and property from flooding, erosion and wildfires.</p>	<p>35.1 Alluvial and debris torrent fan hazards will be identified. Where appropriate, mitigation techniques to reduce hazards will be implemented and settlement will be directed away from these areas.</p> <p>35.2 Watershed assessment will be performed on a priority basis of watersheds upstream of high hazard settlement areas.</p> <p>35.3 Alternative methods of fuel management will be promoted to assist in the prevention of wildfire and reduce associated damage.</p>
<p>C. OUTDOOR RECREATION</p>	
<p>36. Manage Crown land to provide a range of outdoor recreation settings.</p>	<p>36.1 Recreational settings are described in this section using the Ministry of Forests Recreation Opportunities Spectrum (ROS). All strategies refer to long-term management; they do not preclude roads and extractive resource development, though they should guide post-operation access management and restoration. These strategies do not refer to access management of Crown land for wildlife.</p> <p>36.2 Alpine and sub-alpine areas should be managed to achieve an ROS classification of Semi-Primitive Non-Motorized. Mechanized uses including snowmobiling, heli-ski and cat-ski may be acceptable subject to existing tenure, local plans and agreements, and wildlife habitat concerns.</p> <p>36.3 Inoperable terrain below the sub-alpine should be managed to achieve an ROS classification of Semi-</p>

	<p>Primitive.</p> <p>36.4 Most operable Crown land outside protected areas will be managed to an ROS classification of Routed Resource Land or Semi-Primitive Motorized. Some areas of high recreational value, named in Appendices 1 - 7, should be managed such that portions of those areas achieve an ROS classification of Semi-Primitive Non-Motorized.</p>
<p>37. Manage Crown land to maintain recreation features and provide new trails, campsites and related infrastructure.</p>	<p>37.1 Backcountry recreation corridors, sites and use areas should be managed according to Chapter 3, section 3.9 of this plan.</p> <p>37.2 Strategies and plans should be developed to address management of specific recreation resources and facilities. Priority should be given to strategies for long distance snowmobile trails, recreational river corridors and hiking trails.</p> <p>37.3 Official heritage designation under the <i>Heritage Conservation Act</i> should be established for portions of the Howse, Athabasca and Dewdney Trails. Under this designation, trails would be managed according to ‘heritage trail management plans’ developed under the protocol agreement between the Ministry of Forests and the Ministry of Small Business, Tourism and Culture regarding heritage trails.</p> <p>37.4 Nominated rivers will be evaluated with the goal of identifying and nominating candidates for heritage river status under the <i>Heritage Rivers Act</i>.</p>
<p>D. VISIBLE AREAS</p>	
<p>38. Design of timber harvesting, forest management and mineral exploration should reflect the importance of front country landscapes to communities, recreation and tourism.</p>	<p>38.1 Areas visible from main paved highways, recreation waterways and communities should be designated as “known scenic areas” under the FPC.</p> <p>38.2 Guidelines for management of frontcountry visual areas (Chapter 3, section 3.8) establishes design intent for timber harvesting, forest management and mineral exploration in known scenic areas.</p> <p>38.3 In consultation with affected communities and businesses, Ministry Forest District Managers should establish Visual Quality Objectives for known scenic areas. Standards for these VQOs should be consistent with management guidelines identified above.</p>

	<p>38.4 Alternative silvicultural systems, (e.g., selection harvesting, shelterwood, seed trees), should be favoured, where possible and appropriate, in known scenic areas.</p> <p>38.5 Circumstances such as fire and insect or disease outbreak may necessitate logging in known scenic areas which does not conform to the guidelines (Chapter 3, section 3.8). Good visual design will, however, be required for all work under these circumstances.</p> <p>38.6 Mineral exploration and mine development may result in visual disturbance that does not conform to the guidelines. Good visual design should be applied to such work.</p> <p>38.7 Further timber harvesting in existing cutblocks may be promoted as a means to improve visual design within some known scenic areas.</p> <p>38.8 Local biophysical conditions on individual landscapes will be assessed to determine the tree height required to achieve visually effective greenup in known scenic areas.</p>
<p>39. Planning and design of timber harvesting, forest management and mineral exploration in backcountry areas should consider visual landscape quality.</p>	<p>39.1 Chapter 3 (section 3.9) provides guidelines for management of backcountry recreation features and facilities. These guidelines include provisions for visual management of resource development activities. Design and planning for timber harvesting, forest management and mineral exploration should be consistent with these guidelines.</p> <p>39.2 Where possible, design of cutblocks and roads outside scenic areas and other areas explicitly managed for visuals should reflect principles of good visual design.</p>

CONSERVATION VALUES

<p>A. GENERAL ECOSYSTEM HEALTH</p>	
<p>40. Maintain healthy, functioning ecosystems that are essential to the diversity, abundance, distribution and life histories of fish, wildlife, vegetation and water resources.</p>	<p>40.1 A regional biodiversity benchmark will be maintained which identifies benchmark management regimes and ranks habitats that are critically important to the maintenance of regional ecosystems. The regional biodiversity benchmark will be used to evaluate risk from this land use plan and report on the risk to protection, conservation and restoration of critical habitats.</p>

	<p>40.1.1 A regional monitoring program will be developed and implemented to track progress (over space and time) relative to the environmental objectives identified in this plan, and relative to the regional biodiversity benchmark. Study plots will be identified in protected and non-protected areas as a basis for researching and monitoring ecological change.</p> <p>40.1.2 An environmental supply review will be developed to contribute to the amendment of land and resource management plans and policies, and to conserve and protect healthy functioning ecosystems. The environmental supply review and the timber supply review will utilize the same definition of current management.</p> <p>40.2 An ecosystem-based approach to land and resource planning and management will be applied. In addition to other resource legislation, regulations and policies, the <i>Forest Practices Code of British Columbia Act</i> (FPC), will be used as a primary means of implementing an ecological approach to land and resource planning and management.</p> <p>40.3 A regional inventory plan will be developed that identifies and ranks information and mapping needed to support planning and management of terrestrial and aquatic ecosystems, and to support the development of air and water quality objectives. The regional inventory plan will identify decision criteria for collecting information on presence/absence, abundance, distribution, life history, and meta-population dynamics of species, associations and communities.</p> <p>40.4 Landscape unit planning will be consistent with the FPC Biodiversity Guidebook and policy for identification of landscape unit boundaries and associated biodiversity emphasis options. This regional land use plan will use the interim landscape unit boundaries and biodiversity emphasis options identified in Chapter 3, section 3.2. A landscape unit planning strategy will be developed by October 30, 1997, which will identify the process and schedule for finalizing landscape unit specific objectives.</p> <p>40.5 Consumptive uses (i.e. hunting, angling, water allocation, waste emissions) of environmental values will be regulated within the priority to maintain healthy, functioning ecosystems and populations.</p> <p>40.6 Where private lands provide an important contribution to the maintenance of terrestrial or aquatic</p>
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	<p>ecosystem values, efforts will be made to coordinate public/private land planning and management, and to encourage appropriate conservation measures on private land. A private land acquisition program will be initiated to identify critical areas and the means to secure them, should such lands become available.</p> <p>40.7 The introduction of non-indigenous plant and animal species into ecosystems will be severely restricted. Over time, efforts will be made to eliminate identified non-indigenous species through ecosystem restoration measures.</p> <p>40.8 Communication and consultation with the general public, industry, local government agencies and environmental user groups will aim to encourage awareness and voluntary compliance with environmental regulations, and adoption of codes of conduct that are consistent with environmental conservation objectives and strategies in this plan.</p> <p>40.9 Hunting, fishing and trapping will continue to be managed to achieve ecosystem health objectives and strategies.</p>
<p>41. Protect, conserve, and reduce risks to rare, threatened and endangered terrestrial and aquatic species.</p>	<p>41.1 In cooperation with the provincial conservation data centre, information will be obtained on rare, threatened and endangered species. The information will be used to monitor, protect and conserve species at risk.</p> <p>41.2 Inventories of key habitat areas and populations for red and blue listed species will be prepared and maintained and will be integrated into land and resource planning and decision-making processes at all levels.</p> <p>41.3 Species recovery plans for red, blue or regionally extirpated species will be prepared and implemented. Red, blue and regionally significant or extirpated species that are affected by forest or range practices will be considered candidates for designation as identified wildlife species under the FPC (Appendix B within this chapter). Essential habitats for these species will be identified and considered for designation as either wildlife habitat areas or sensitive areas under the FPC, and addressed in landscape unit objectives.</p> <p>41.4 Critical habitats of red and some blue listed species will be protected, conserved or restored, through Goal 2 of the Protected Areas Strategy in the West Kootenays, or provisions under the FPC, as required, to manage to the</p>

	desired habitat condition.
42. Maintain the quality, integrity and connectivity of grassland habitats so as to support the associated red and blue listed species.	<p>42.1 The natural grassland communities will be restored and maintained. (See also Rangeland Ecosystems, section D).</p> <p>42.2 Grazing management regimes will integrate requirements for sensitive wildlife habitat areas that are mapped and identified in approved range and forest development plans. (See also Rangeland Ecosystems, section D).</p>
43. Maintain wildland attributes necessary for ecosystem health through coordinated access planning for resource development and associated activities.	43.1 Site specific access issues will be addressed through lower level strategic planning in a cooperative, integrated method and consistent with the Access Management Guidelines (Chapter 3, section 3.12).
B. TERRESTRIAL ECOSYSTEM HEALTH	
44. Maintain the regional diversity and a suitable abundance of native terrestrial species of plants and animals, and the ecosystems upon which they depend.	<p>44.1 A regional network of protected areas, regional scale connectivity corridors, landscape level forest ecosystem networks (FENS), <u>old growth management areas, wildlife tree patches, riparian reserves and appropriate levels of coarse woody debris</u> will be developed and maintained through MOUs for FDPs to provide opportunities for the distribution of species, populations and genetic material.</p> <p>44.2 Management direction statements and park master plans developed for new protected areas will be consistent with conservation biology principles, enable scientific research into natural systems, and encourage the use of protected areas as a comparative benchmark for monitoring ecological change.</p> <p>44.3 Where appropriate, resource planning objectives and strategies on lands adjacent to, and within, protected areas will be managed to objectives which are consistent with one another within the context of BEO's, FPC guidelines and Regional MOU's.</p> <p>44.4 The prevention or minimization of fragmentation of lands suitable for regional level connectivity corridors (i.e., under represented ecosystems and key habitat areas) will be managed through the application of the connectivity guidelines (Chapter 3, section 3.3).</p> <p>44.5 Old growth management areas (as per FPC) will be identified, preferably within or in close proximity to</p>

	<p>regional connectivity corridors and landscape forest ecosystem networks, and will be managed to maintain appropriate interior forest habitat conditions, as per the FPC Biodiversity Guidebook.</p> <p>44.6 The East Columbia Lake, Hamling Lakes and Midge Creek Wildlife Management Areas will be established. Cooperative inter-agency management plans for these areas will be developed and implemented.</p> <p>44.7 Corridors will be managed and used, in accordance with the biodiversity emphasis levels established for those areas (Chapter 3, section 3.2), to provide interim management of connectivity requirements until landscape unit boundaries and objectives are finalized.</p> <p>44.8 Site-specific resource development activities will, where possible, be designed to resemble the shape and pattern of natural disturbances, except where otherwise intended by this plan, e.g., in ERDZ. Patch size distribution, as defined in the Biodiversity Guidebook, will be deployed to emulate natural disturbance patterns.</p> <p>44.8.1 In order to implement the patch size concept the following two strategies will be implemented: a) the general adjacency height (outside of scenic areas and community watersheds) will be changed from 3m to 2m; b) the maximum clearcut size will be modified to be consistent with the patch size concepts in the FPC Biodiversity Guidebook.</p> <p>44.9 The coverage, accuracy and resolution of terrestrial ecosystem mapping will be upgraded over time, giving priority to areas of high resource conflict.</p> <p>44.10 Landscape unit objectives will consider management of deciduous leading stands such as cottonwoods, aspen and birch for purposes such as biodiversity management.</p> <p>44.11 Wildlife habitat areas as defined in the Identified Wildlife Guidebook will be established adjacent to alpine and subalpine environments to provide security/escape cover for animals using alpine habitats.</p> <p>44.11.1 Road access development in key alpine habitats will be managed with mitigation standards and procedures, as they relate to regulated closure, reclamation and rehabilitation, to be pre-determined prior to approval.</p>
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	<p>44.11.2 Snowmobile use in key alpine habitats will be restricted to minimize conflicts with wildlife.</p>
<p>45. Maintain the diversity and a suitable abundance of wide ranging carnivore populations and the ecosystems upon which they depend.</p>	<p>45.1 The quantity and quality of wide ranging carnivore habitat capability/suitability mapping will be upgraded, with a priority on grizzly bears.</p> <p>45.2 Prey species will be maintained at levels necessary to maintain viable populations of wide ranging carnivore species.</p> <p>45.2.1 Viable populations of prey species will be maintained through the implementation of the FPC and hunting and trapping regulations.</p> <p>45.3 Grizzly bear management plans and management areas will be established in accordance with the provincial grizzly bear conservation strategy. Consistent with provincial policy direction, grizzly bear management areas, and associated management strategies, will not result in additional constraints on the regional timber supply in the short term.</p> <p>45.3.1 Priorities for grizzly bear inventory, management and planning will be in those areas where populations are most at risk.</p> <p>45.4 Grizzly bear management guidelines will be implemented in areas with known high grizzly densities and known high risk areas (Chapter 3, section 3.4).</p> <p>45.5 Lower level strategic planning will incorporate information on grizzly bear densities, habitat and movement, with a view to maintaining target road densities (Chapter 3, section 3.4) for high density or high risk grizzly areas.</p> <p>45.6 Food production (e.g., berries) will be encouraged in timber silviculture prescriptions in key grizzly areas. Herbicides will not be used for forest management on key forage areas, unless the forage opportunities are maintained or enhanced.</p> <p>45.7 The Kootenay problem bear translocation policy will be implemented and will identify translocation opportunities in the event that public safety issues arise. A list of possible sites will be identified in the annual MOU.</p>

	<p>45.8 Bear/human conflicts will be minimized through hunting, access management planning, proper landfill planning and enforcement, and adequate trail and campground design in recreation areas.</p>
<p>46. Maintain viable populations of mountain caribou.</p>	<p>46.1 Mountain Caribou Guidelines will be applied in key caribou habitat (Chapter 3, section 3.6) at the stand and landscape level. Landscape unit objectives and Forest Development Plans should reflect the intent of the Caribou guidelines.</p> <p>46.2 In areas where caribou habitat overlaps with ungulate winter range, the management for caribou, including application of the mountain caribou guidelines, will take precedence.</p> <p>46.3 Lower level strategic plans will identify calving areas and principal summer habitats and will incorporate information on mountain caribou densities, habitat and movement with a view to maintaining target road densities (Chapter 3, section 3.6) within such areas.</p> <p>46.4 Guidelines will be prepared and implemented to minimize disturbance of mountain caribou populations in winter habitat areas with respect to recreation and commercial tourism, in particular, snowmobiling activities.</p>
<p>47. Maintain the diversity and a suitable abundance of ungulate species and the habitats on which they depend.</p>	<p>47.1 The quality of regional information on species-specific habitat requirements and ungulate habitat capability will be upgraded, over time, through field research and inventory mapping, and will modify the guidelines annually for use in the MOU for FDP's.</p> <p>47.2 Ungulate management guidelines will be applied to key ungulate winter habitat areas (Chapter 3, section 3.5).</p> <p>47.3 Ungulate forage and habitat enhancement measures (e.g., prescribed burning) will be undertaken in key winter range and habitats, or as determined through lower level strategic planning and ongoing environmental program delivery initiatives.</p> <p>47.4 Lower level strategic planning will incorporate information on ungulate habitats and movement, with a view to reducing stress and displacement of wintering ungulates and maintaining target road densities (Chapter 3, section 3.5).</p>

	<p>47.5 Road and rail kill of ungulates will be minimized through cooperation between BC Environment and the authorities responsible for design and maintenance of highways and railways, and through driver education.</p>
<p>48. Maintain and diversify the recreational value of wildlife.</p>	<p>48.1 Quality sport hunting opportunities of ungulates will continue to be offered to residents and non-residents of British Columbia.</p> <p>48.2 Wildlife viewing will be encouraged at times and places that do not put undue stress on wildlife species and populations.</p>
<p>B. AQUATIC ECOSYSTEM HEALTH</p>	
<p>49. Protect and conserve aquatic ecosystem functions and processes.</p>	<p>49.1 A regional aquatic conservation strategy will be developed to guide decisions on the protection, conservation, restoration and monitoring of aquatic ecosystems incorporating Goal 2 of the Protected Area Strategy in the West Kootenay, and the implementation of the FPC. This strategy will incorporate the concepts of integrated watershed planning and management.</p> <p>49.1.1 A non-point source pollution abatement strategy will be developed and adopted for non-forestry related land based activities.</p> <p>49.2 Watersheds and wetlands requiring restoration will be inventoried, prioritized and rehabilitated, primarily through the watershed restoration program of Forest Renewal B.C. Rehabilitation in fish bearing streams will include wild stock population enhancement and measures to restore sources of large organic debris and streamside vegetative cover.</p> <p>49.3 Riparian reserves and management areas will be managed according to FPC regulations and the standards and guidelines established in the FPC Riparian Management Guidebook.</p> <p>49.4 A regional lake classification system will be implemented as per the FPC.</p> <p>49.5 A wetland classification strategy will be developed and implemented to protect and conserve wetland riparian ecosystems.</p> <p>49.6 Selected lakes, which currently do not contain fish, will be managed to prevent fish introductions so as to</p>

	<p>maintain their ecological integrity and serve as baseline indicators of these aquatic ecosystems.</p>
<p>50. Ensure the sustainability of fish species diversity and populations, especially wild fish stocks.</p>	<p>50.1 Implement the regional fisheries strategic plan which identifies management objectives and strategies for specific fish species.</p> <p>50.2 Where appropriate, watershed analysis will be performed on regionally significant fish streams using the FPC Interior Watershed Assessment Procedure to define appropriate watershed-specific strategies for maintaining/restoring in-stream flows and sediment regimes.</p> <p>50.3 The quality of regional fish habitat inventories (including non-sport species) will be upgraded over time, as a basis for identifying and ranking sensitive/critical fisheries areas (e.g., reaches, pools, rearing areas, spawning areas, migration limits) that require protection and site-specific management action.</p> <p>50.4 On the basis of inventories, and through landscape level planning, appropriate fish habitats will be designated as sensitive areas or be classified under the FPC Identified Wildlife Guidebook as wildlife habitat areas.</p> <p>50.5 Roads that cause chronic negative impacts to fish (e.g., sedimentation) will be assessed and ranked for adequate maintenance or permanent de-activation, as part of coordinated access management planning initiatives.</p> <p>50.6 In-stream flows that are adequate to maintain fish stocks will be determined. Consideration of these requirements will be incorporated into water licensing mechanisms.</p>
<p>51. Maintain water quality, quantity and timing of flow at appropriate levels in community and domestic use watersheds.</p>	<p>51.1 Areas officially designated as community watersheds will be managed in accordance with the Community Watershed Guidebook under the FPC. There will be annual reviews of the existing provincial list of community watersheds to determine additions or deletions. Currently defined community watersheds are identified by Forest District in Appendices 1 - 7.</p> <p>51.2 Domestic Watershed Guidelines will guide timber and subsurface access and resource development activities in domestic use watersheds (i.e., non community watersheds) (Chapter 3, section 3.7).</p>

	<p>51.3 Contingency measures should be available for domestic or community water supplies to be remediated if damaged by resource development.</p> <p>51.4 Water quality monitoring programs will be implemented in community watersheds and other high priority areas through a process of needs identification and prioritization.</p> <p>51.4.1 Water quality, quantity and timing of flow objectives will be developed in selected watersheds.</p> <p>51.5 Engineering guidelines for the construction and maintenance of domestic water supply systems will be developed and promoted.</p> <p>51.6 The means to share authority with regional governments in the regulation of water use and the protection of water quality, within designated pilot areas will be explored.</p> <p>51.7 Water management plans will be prepared in high conflict areas as a component of landscape unit plans. These plans will guide water licensing decisions, community development planning and will provide information to other resource planning processes.</p> <p>51.8 The merits of requiring all domestic water use to be licensed will be assessed and, if deemed appropriate, amendment of the <i>Water Act</i> will be proposed.</p> <p>51.9 Roads that cause chronic negative impacts to domestic water use will be assessed and ranked for maintenance or permanent deactivation as part of coordinated access management planning initiatives.</p>
C. AIR QUALITY	
<p>52. Maintain air quality within established national and provincial criteria.</p>	<p>52.1 Airshed management plans will be initiated.</p> <p>52.2 Industrial emissions (e.g., does not include range and wildlife burns) to airsheds will be limited through pollution prevention initiatives or enforcement of the permits or approvals under the <i>Waste Management Act</i>.</p> <p>52.3 Communities with poor air quality will be given high priority for ambient air quality monitoring.</p> <p>52.4 Partnerships with communities and special interest</p>

	<p>groups will be developed to assist with the development of air quality management plans, and to target actions on localized sources of air contaminants (e.g., agricultural burning and smoke emissions from residences).</p> <p>52.5 Assistance will be provided to the forest industry to phase-out the use of beehive burners and to identify alternatives for woodwaste disposal.</p>
D. RANGELAND ECOSYSTEMS	
<p>53. Maintain highly diverse and contiguous rangelands.</p>	<p>53.1 Grazing regimes for rangelands will be planned and managed according to ecosystem management principles and in response to site-specific information generated through monitoring initiatives.</p> <p>53.2 Range Reference Areas will be developed and maintained as a basis for determining potential natural communities.</p> <p>53.3 The comprehensive noxious weed management program will be implemented. Opportunities to expand implementation to cover all land jurisdictions will be explored.</p> <p>53.4 Vehicle use will be managed in a coordinated fashion on Crown rangeland areas to minimize negative effects on rangeland values.</p> <p>53.5 Proposals for new livestock grazing tenures in alpine grassland ecosystems (AT, AT/ESSFdkp and ESSFdkp) will not generally be accepted. Any such proposals will be closely scrutinized for ecosystem benefits, and any new permits issued will be subject to rigorous monitoring.</p> <p>53.6 Rangeland ecosystem management in protected areas and regional connectivity corridors will occur according to the Seral Stage Guidelines (Appendix C).</p> <p>53.7 Official Community Plans should consider grassland conservation in their zoning.</p>
<p>54. Manage rangeland ecosystems within the limits of their sustainable carrying capacity.</p>	<p>54.1 Forage production and forage removal by both livestock and wildlife will be monitored on an ongoing basis. Management of forage will be modified, as appropriate, based on the monitoring results.</p> <p>54.2 A sufficient proportion of annual forage production will be retained to ensure rangeland productivity and</p>

	<p>health. The balance of annual forage production will be appropriately allocated between wildlife and livestock.</p> <p>54.3 The distribution of rangeland habitats will be maintained over space and time.</p> <p>54.4 Management strategies and tools (e.g., range riding, salting and water availability or intercept ranges and habitat enhancement) will be applied to enhance the temporal and spatial distribution of livestock and wildlife species within rangeland ecosystems.</p> <p>54.5 Management strategies for critical grassland areas outside of livestock grazing areas will be developed and implemented.</p> <p>54.6 The Grazing Enhancement Fund will be utilized to help achieve the agriculture and rangeland objectives of this plan.</p>
<p>55. Restore rangeland by reducing current and historic forest ingrowth.</p>	<p>55.1 A healthy balance between timber and grassland resources will be restored in natural disturbance type 4 (NDT4) areas by creating large openings and widely-spaced trees, with a preponderance of mature and old trees and a minimum of regeneration.</p> <p>55.2 A fire maintained ecosystem restoration program will be implemented in NDT4 areas (Chapter 3, section 3.10). Where ungulate winter range overlaps with NDT4, the management for fire maintained ecosystems, including the application of those guidelines, will take precedence.</p> <p>55.3 A forest ingrowth inventory of NDT4 areas in Arrow and Boundary Forest Districts will be developed and implemented, as a basis for restoration projects in those areas.</p>
<p>56. Maintain and restore the integrity of riparian areas.</p>	<p>56.1 Riparian management monitoring and demonstration projects will be developed and undertaken so as to provide information to the implementation processes.</p> <p>56.2 Important riparian areas that need restoration from livestock and other sources of damage will be identified, and suitable rehabilitation and alternate management strategies will be developed and implemented.</p>
<p>57. Ensure all rangeland-dependent rare species are</p>	<p>57.1 Inventories will be compiled on the presence, location and status of rare animal and plant species and</p>

identified and maintained in a viable state.	communities in rangeland ecosystems. 57.2 Management programs for rare animal and plant communities in rangeland ecosystems will be developed and implemented.
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Appendix A Application and content of Regional Growth Strategy

Purpose of regional growth strategy

942.11 (1) The purpose of a regional growth strategy is to promote human settlement that is socially, economically and environmentally healthy and that makes efficient use of public facilities and services, land and other resources.

(2) Without limiting subsection (1), to the extent that a regional growth strategy deals with these matters, it should work towards but not be limited to the following:

- (a) avoiding urban sprawl and ensuring that development takes place where adequate facilities exist or can be provided in a timely, economic and efficient manner;
- (b) settlement patterns that minimize the use of automobiles and encourage walking, bicycling and the efficient use of public transit;
- (c) the efficient movement of goods and people while making effective use of transportation and utility corridors;
- (d) protecting environmentally sensitive areas;
- (e) maintaining the integrity of a secure and productive resource base, including the agricultural and forest land reserves;
- (f) economic development that supports the unique character of communities;
- (g) reducing and preventing air, land and water pollution;
- (h) adequate, affordable and appropriate housing;
- (i) adequate inventories of suitable land and resources for future settlement;
- (j) protecting the quality of ground water and surface water;
- (k) settlement patterns that minimize the risks associated with natural hazards;
- (l) preserving, creating and linking urban and rural open space including parks and recreation areas;
- (m) planning for energy supply and promoting efficient use, conservation and alternative forms of energy;
- (n) good stewardship of land, sites and structures with cultural heritage value.

**Appendix B Kootenay/Boundary Region Red and Blue-Listed
and Key Regionally Significant (Yellow-Listed) Wildlife
Species under consideration as Identified Wildlife
through the Forest Practices Code**

COMMON NAME	SCIENTIFIC NAME	STATUS
<u>Amphibians</u>		
Coeur d'Alene salamander	<i>Plethodon idahoensis</i>	R
Tailed frog	<i>Ascaphus truei</i>	B
Northern leopard frog	<i>Rana pipiens</i>	R
Spotted frog	<i>Rana pretiosa</i>	Y
<u>Reptiles</u>		
Painted turtle	<i>Chrysemys picta</i>	B
Rubber boa	<i>Charina bottae</i>	B
<u>Birds</u>		
Eared grebe	<i>Podiceps nigricollis</i>	Y
Western grebe	<i>Aechmophorus occidentalis</i>	R
American white pelican	<i>Pelecanus erythrorhynchos</i>	R
American bittern	<i>Bautaurus lentiginosus</i>	B
Great blue heron	<i>Ardea herodias</i>	B
Trumpeter swan	<i>Cygnus buccinator</i>	B
Wood duck	<i>Aix sponsa</i>	Y
Harlequin duck	<i>Histrionicus histrionicus</i>	Y
American avocet	<i>Recurvirostra americana</i>	B
Long-billed curlew	<i>Numenius americanus</i>	B
Common golden eye	<i>Bucephala clangula</i>	Y
Bufflehead	<i>Bucephala albeola</i>	Y
Barrow's goldeneye	<i>Bucephalia islandica</i>	Y
Turkey vulture	<i>Cathartes aura</i>	B
Bald eagle	<i>Haliaeetus leucocephalus</i>	Y
Northern harrier	<i>Circus cyaneus</i>	Y
Sharp-shinned hawk	<i>Accipiter striatus</i>	Y
Cooper's hawk	<i>Accipiter cooperii</i>	Y
Northern goshawk subsp. <i>atricapillus</i>	<i>Accipiter gentilis atricapillus</i>	Y
Broad-winged hawk	<i>Buteo platypterus</i>	B
Swainson's hawk	<i>Buteo swainsoni</i>	B
Peregrine falcon subsp. <i>anatum</i>	<i>Falco peregrinus anatum</i>	R
Prairie falcon	<i>Falco mexicanus</i>	R
Sharp-tailed grouse subsp. <i>columbianus</i>	<i>Tympanuchus Phasianellus columbianus</i>	B
Sandhill crane	<i>Grus canadensis</i>	B
Upland sandpiper	<i>Bartramia longicauda</i>	R
Forster's tern	<i>Stern forsteri</i>	R
Flammulated owl	<i>Otus flammeolus</i>	B
Western screech owl subsp. <i>macfarlanei</i>	<i>Otus kennicottii macfarlanei</i>	B
Northern pygmy owl	<i>Glaucidium gnoma+B130</i>	Y
Long-eared owl	<i>Asio otus</i>	Y
Short-eared owl	<i>Asio flammeus</i>	B
Northern saw-whet owl	<i>Aegolius acadicus</i>	Y

COMMON NAME	SCIENTIFIC NAME	STATUS
Vaux's swift	<i>Chaetura vauxi</i>	Y
White-throated swift	<i>Aeronautes saxatalis</i>	B
Black-chinned hummingbird	<i>Archilochus alexandri</i>	Y
Lewis' woodpecker	<i>Melanerpes lewis</i>	B
Williamson's sapsucker subsp. <i>nataliae</i>	<i>Sphyrapicus throideus nataliae</i>	R
Pileated woodpecker	<i>Dryocopus pileatus</i>	Y
Brown creeper	<i>Certhia americana</i>	Y
Canyon wren	<i>Catherpes maxicanus</i>	B
Western bluebird	<i>Sialia mexicana</i>	Y
Golden-crowned kinglet	<i>Regulus satrapa</i>	Y
Red-eyed Vireo	<i>Vireo olivaceus</i>	Y
Grasshopper sparrow	<i>Ammodramus savannarum</i>	R
Bobolink	<i>Dolichonyx oryzivorus</i>	B
<u>Mammals</u>		
Silver-haired bat	<i>Lasionycteris noctivagans</i>	Y
Hoary bat	<i>Lasiurus cinereus</i>	Y
Northern long-eared myotis	<i>Myotis septentrionalis</i>	R
Fringed myotis	<i>Myotis thysanodes</i>	B
Townsend's big-eared bat	<i>Plecotus townsendii</i>	B
Southern red-backed vole subsp. <i>galei</i>	<i>Clethrionomys gapperi galei</i>	B
Southern red-backed vole (other subsp.)	<i>Clethrionomys gapperi</i>	Y
Northern pocket gopher subsp. <i>segregatus</i>	<i>Thomomys talpoides segregatus</i>	R
Least chipmunk subsp. <i>oreocetes</i>	<i>Tamias minimus oreocetes</i>	B
Least chipmunk subsp. <i>selkirki</i>	<i>Tamias minimus selkirki</i>	R
Red-tailed chipmunk subsp. <i>simulans</i>	<i>Tamias ruficaudus simulans</i>	R
Red-tailed chipmunk subsp. <i>ruficaudus</i>	<i>Tamias ruficaudus ruficaudus</i>	R
Wolverine subsp. <i>luscus</i>	<i>Gulo gulo loscus</i>	B
Marten	<i>Martes americana</i>	Y
Fisher	<i>Martes pennanti</i>	B
Badger	<i>Taxidea taxus</i>	B
Grizzly bear	<i>Ursus arctos</i>	B
Mountain goat	<i>Oreamnos americanus</i>	Y
Bighorn sheep subsp. <i>canadensis</i>	<i>Ovis canadensis canadensis</i>	B
Moose	<i>Alces alces</i>	Y
Elk subsp. <i>nelsoni</i>	<i>Cervus elaphus nelsoni</i>	Y
Mule Deer	<i>Odocoileus hemionus hemionus</i>	Y
White-tailed deer	<i>Odocoileus virginianus</i>	Y
Caribou (southeastern populations)	<i>Rangifer tarandus</i>	B
<u>Fish</u>		
Bull trout	<i>Salvelinus confluentus</i>	B
Chiselmouth	<i>Acrocheilus alutaceus</i>	B
Mottled sculpin	<i>Cottus bairdi</i>	B
Shorthead sculpin	<i>Cottus confusus</i>	B
Umatilla dace	<i>Rhinichthys umatilla</i>	R
White sturgeon (Kootenay River pop.)	<i>Acipenser transmontanus</i>	R
White sturgeon (Columbia River pop.)	<i>Acipenser transmontanus</i>	R

Appendix C Seral Stage Guidelines for Rangelands in Provincial Parks and Regional Connectivity Corridors

1. Seral stage requirements set out in the current version of the Forest Practices Code Biodiversity Guidebook to apply as the default. If Guidebook requirement change, these Guidelines would be expected to change accordingly.
2. NDT4 and other grassland areas within portions of provincial parks containing livestock grazing: 75% of the area to be at 75% of the potential natural community.
3. NDT4 and other grassland areas within portions of the regional connectivity corridors containing livestock grazing: 35% of the area at 75% of the potential natural community. (It is recognized that this target may not be achievable in the short term in low elevation portions of the Rock Creek, Kettle and Granby River drainages, due to noxious weed invasions.)
4. Fire maintained ecosystem restoration guidelines to be applied as a high priority in these areas.

Chapter 3 Resource Management Guidelines

3.1 Explanation of Resource Management Guidelines and Regionally Significant Resource Value Maps

A main goal that guided development of the KBLUP Implementation Strategy was to not only provide a long-range, strategic vision for land and resource management, but also to provide sufficient clarity and detail to support lower level planning and operational level resource management decision-making. To that end, a series of resource management guidelines and associated resource value maps (as detailed in this chapter) were developed for key natural resource values. The guidelines and maps work in combination to provide specific, spatially referenced resource management guidance within the context of the overall management objectives and strategies outlined in Chapter 2. The guidelines supplement other existing resource management guidelines, such as the provincial series of Forest Practices Code guidelines.

Each of the resource management guidelines describes, for a particular value, the type and level of resource management practices/standards that are recommended in order to conserve the integrity of that resource value. The resource value maps are used in tandem with the resource management guidelines to show the recommended spatial extent of guideline application. The geographic locations of the values shown on the maps indicate the areas where the resource value is considered to have provincial or regional significance, based on assessments of scarcity and uniqueness of the value. It is recognized that there are also many other areas where resource values exist that are locally significant. Resource management direction for these locally significant resource values will be determined through application of standard resource management provisions (e.g., FPC guidebooks), through lower level strategic and operational planning processes, or through application of the general, region-wide land and resource management strategies contained in Chapter 2.

The information provided in the guidelines and maps will be used to instruct and guide all subsequent land use and natural resource management planning initiatives, including landscape level planning and operational planning. The expectation is that, where resource management guidelines overlap on the ground (e.g., where a grizzly bear guideline and an ungulate management guideline apply to the same geographic area), the requirements of all applicable guidelines should be applied, and the most constraining guideline (in terms of restrictions on resource development) should be implemented for that area. This should result in resource management practices that sustain all resource values in the area. Instructions to tenure holders that are issued by agencies responsible for oversight of FPC operational planning requirements should clearly indicate the requirement for operational plans to consider the appropriate guidelines in this plan.

The resource value maps contained in this chapter are presented at a relatively small scale and thus provide only a general indication of the recommended extent of resource management guideline application. Larger scale resource value maps (available in resource management agency regional and district offices) should be referenced if greater geographical accuracy of resource management guideline application is needed.

The guidelines and associated maps were prepared on the basis of best current information, and in conformance with the planning constraint to limit short-term timber supply reductions in recognition of community stability requirements (see Chapter 1, section 1.4). The guidelines are intended to be applied with sufficient flexibility to allow site-specific judgments and decisions which best fit individual circumstances and characteristics, within the context of the overall management objectives and strategies identified in Chapter 2. However, it is anticipated that the guidelines and maps will evolve over time. Such changes will likely result from a variety of factors, including:

- experience gained in implementation of the guidelines;
- new or better information due to ongoing inventory or research, and;
- refinement of the management direction by moving to the local or site-specific level which will identify opportunities which could not be addressed at this regional scale.

Refinements and/or interpretations of the guidelines and/or maps, which may be required to ensure effective 'on-the-ground' delivery, will result from an inter-agency process. The two main vehicles for this purpose are an inter-agency agreement (Memorandum of Understanding) and landscape unit objectives and plans (see Chapter 6, section 6.3). Major changes to the guidelines and/or maps must be approved by the Kootenay Inter-Agency Management Committee, in conformance with KBLUP provisions respecting Plan Amendment (see Chapter 6, section 6.8). Any interpretations or changes to the guidelines or maps will be undertaken in a manner which is consistent with the intent of the guideline and in conformance with the overall management direction provided through the regional objectives and strategies (Chapter 2).

3.2 Management for General Biodiversity

3.2.1 Introduction

(a) *Guideline Intent*

To provide strategic direction for the management of General Biodiversity. As per the FPC Biodiversity Guidebook, management for general biodiversity is based on the following principles and assumptions:

- The more that managed forests resemble the forests that were established from natural disturbances, the greater the probability that all native species and ecological processes will be maintained.
- The habitat needs of most forest and range organisms can be provided for by:
 - modeling and maintaining an optimum variety of patch sizes, seral stages, and forest stand attributes and structures across a variety of ecosystems and landscapes
 - maintaining connectivity of ecosystems in such a manner as to ensure the continued dispersal and movement of forest- and range-dwelling organisms across the landscape
 - providing forested areas of sufficient size to maintain forest interior habitat conditions and to prevent the formation of excessive edge habitat.
- To sustain genetic and functional diversity, a broad geographic distribution of ecosystems and species must be maintained within forest and range lands.
- To ensure that management for biodiversity is flexible and adaptive.
- To maintain in perpetuity all existing native species across their historic ranges.
- To manage for biodiversity across and within Landscape Units.
- The conservation of biodiversity depends on a coordinated strategy that includes:
 - a system of protected areas at the regional scale
 - provision for a variety of habitats at the landscape scale
 - management practices that provide important ecosystem attributes at the stand scale.

(b) *General management approach*

Mature Plus Old and Old Seral Targets

Establishing mature plus old and old seral targets is the primary purpose in landscape unit planning. Management strategies to achieve these targets must be flexible and adaptive. The objective is to plan the landscape unit so as to meet seral targets as soon as possible. Planning design should be ecologically sound while providing opportunities to harvest timber.

Several options can be considered for designing landscapes to meet conditions for mature plus old and old seral targets while maintaining opportunities for harvesting. Some of the options appear below:

1. Setting up of a problem solving forum at the regional planning level or district planning level that interprets and agrees to design landscapes that meet seral targets with negotiated approaches to achieving short term wood supply in an ecologically sound manner.
2. Design landscapes in a matrix of patch sizes according to the guidebook which would facilitate reducing green-up and adjacency constraints and therefore free up short term wood. This is an ecologically appropriate approach and an example of how to work towards this patch size matrix objective would be to immediately reduce green-up in general forestry areas from 3 meters to 2 meters and have no adjacency rules applied for partial harvesting. Another approach may be to use the early seral targets in the guidebook as a planning guide to approving cutting permits rather than using green-up standards.
3. Where mature plus old and old seral deficits exist in High and Intermediate Emphasis interim Landscape Units, design a recruitment strategy that will identify OGMA's and mature areas that will meet the seral targets in the shortest time frame and incorporates the most appropriate areas to meet connectivity, representation, and interior conditions. The general management approach is not to harvest old seral stands if the landscape unit is currently below the seral target. However there may be exceptional circumstances where it makes ecological sense to harvest a small portion of old seral if other areas can be recruited in large patches.
4. Where there currently is an excess of mature plus old or old in a landscape unit the general management approach would be to plan harvesting in the youngest of the stands first.
5. Where no harvesting opportunities appear to exist other options could be pursued such as:
 - old growth could be reduced to 1/3rd of the target in Low Emphasis. The amount of draw down should be based on a management unit (TFL/TSA) and landscape specific circumstances and recruitment strategies should be in place to confirm that the full target can be achieved by the end of the 3rd rotation.
 - Old and mature plus old attributes could be managed for instead of setting aside whole stands. If agreed to definitions for attributes is established this approach would be ecologically sound.
 - Silvicultural standards could be modified to achieve old attributes in a shorter time frame when recruiting from younger stands.
 - Varying age definitions for certain species profiles might be a suitable option that could be used to meet targets while achieving landscape ecosystem objectives. Discussion of such changes will be undertaken preferably within the context of a coordinated provincial process involving MoF, MELP, Industry and Environmentalists.
 - Using alternative targets from the ones used in the guidebook is possibly another suitable option. Discussions of such changes will be undertaken preferably within the context of a coordinated provincial process involving MoF, MELP, Industry and Environmentalists. These type of changes would be backed up with data and scientific scrutiny.

(c) *Spatial Application of Guidelines*

As per the FPC Biodiversity Guidebook, the biodiversity emphasis options will be applied on the basis of landscape units. The draft landscape units and recommended biodiversity emphasis options are indicated on map 3.2. The rationale for the recommended biodiversity emphasis options is outlined, by Forest District, in the applicable appendix (see Appendices 1-7). The allocation of the various emphasis options has been based on the following criteria:

- consistency with provincial policy, including a maximum of 10% of the land base allocated to high emphasis biodiversity, approximately 45% intermediate emphasis and approximately 45 % in low emphasis. These percentages have been distributed by forest district within the Kootenay/Boundary region
- Regional connectivity corridors as defined and interpreted in 3.3.2, under-represented ecosystems for protection of old-growth, critical caribou habitat and priority grizzly bear habitat were also considered in the allocation of high and intermediate biodiversity emphasis options.

3.2.2 *Operational Guidelines*

There is a range of three options for emphasizing biodiversity at the landscape level. Each option is designed to provide a different level of natural biodiversity and a different risk of losing elements of natural biodiversity:

- The lower biodiversity emphasis option may be appropriate for areas where other social and economic demands, such as timber supply, are the primary management objectives. This option will provide habitat for a wide range of native species, but the pattern of natural biodiversity will be significantly altered, and the risk to habitat suitability, capability and effectiveness will be high.
- The intermediate biodiversity emphasis option is a trade-off between biodiversity conservation and timber production. Compared to the lower biodiversity emphasis option, this one will provide more natural levels of biodiversity and a reduced risk of eliminating native species from the area.
- The higher biodiversity emphasis option gives a higher priority to biodiversity conservation but would have the greatest impact on timber harvest, lower risk to extirpation of species.
- Specific direction on biodiversity management practices, such as the establishment of forest ecosystem networks, wildlife tree patches, old growth management areas, seral stage distributions, and coarse woody debris requirements within the three biodiversity emphasis options is outlined in the FPC Biodiversity Guidebook.

3.3 Management for Regional Connectivity

3.3.1 Introduction

(a) Guideline Intent

To maintain opportunities at the regional level for genetic exchange between populations and for gradual shifts in the distribution of whole ecosystems in the face of catastrophic events. The intent is to also use the system of regional connectivity corridors to enhance management of rare habitats, red/blue listed and other regionally significant species, and ecosystems that are under-represented in the protected areas (i.e. < 12% by ecosection, bears, wolverines, etc.)

(b) General Management Approach

The above intent will be achieved by applying the following general measures:

- the viability and effectiveness of core protected areas, as has been identified through the Goal 1 process of the Protected Areas Strategy, is enhanced through support zones and regional landscape connectivity (i.e. linkage corridors) which creates a network for genetic exchange and dispersal
- the connectivity corridors to provide for the seasonal migration of a variety of species which therefore requires efforts to minimize further human-development linear barriers and rehabilitate existing barriers where appropriate.

(b) Spatial Application of Guidelines

The connectivity guidelines will be applied within the regional connectivity corridors as indicated on map 3.3. The corridors were identified through the following criteria:

- inclusion of Special Resource Management Zones that were identified for conservation reasons by the CORE planning process, and subsequently recognized in the government land use decision in March 1995, to serve as support zones for protected areas where appropriate
- representative ecosystem gap analysis of protected areas by ecosection, biogeoclimatic unit and habitat types, both within the region and in adjacent areas where appropriate (recruitment areas for old growth)
- identification of key migration and movement corridors and analysis of physical and human-development barriers to species movement
- distribution of rare ecosystems and the habitat of red/blue-listed species
- areas with minimal existing access or priority areas for restoration and access management at the landscape and stand levels.

3.3.2 Operational Guidelines

The following principles will be refined and reflected in lower level strategic planning processes. In the interim, these principles are to be used within the allocated biodiversity emphasis options (see section 3.2) to address the spirit and intent of regional connectivity during operational planning and decision-making:

- to meet habitat requirements, mixed plant species management will be promoted, with an emphasis on native species where possible
- within the allocated emphasis options, efforts should be made to concentrate retaining attributes in areas adjacent to protected areas
- within the allocated emphasis options, maintain existing old growth stand attributes through designation of old growth management areas and forest ecosystem networks within the connectivity corridors wherever possible
- promote a coordinated, planned approach to minimize linear barriers in low passes to accommodate movement
- when connectivity corridors overlap with other values requiring access management (e.g. priority grizzly bear habitat, ungulate winter range, sub-alpine/alpine grasslands, NDT4, wildland areas or mountain caribou habitat) the priority for access planning, regulation and/or rehabilitation will be within the connectivity corridors. Areas deployed as high emphasis biodiversity will also be a focus of road deactivation, in particular for the purposes of watershed restoration.
- regional connectivity corridors incorporate priority areas that require wildlife species inventory to support the establishment of wildlife habitat areas, as per the FPC Identified Wildlife Handbook.
- a private land acquisition program (see Chapter 2) will focus on critical habitats within connectivity corridors should such lands become available.

3.4 Grizzly Bear Management Guidelines

3.4.1 Introduction

(a) Guideline Intent

To provide the amount and distribution of habitat required to maintain suitable population levels and distributions of grizzly bears, except in recovery areas where populations appear to be too small or too restricted in distribution to remain viable. In such recovery areas, the intent is to provide the amount and distribution of habitat needed to allow the populations to recover in size and distribution, to the point they are self-maintaining.

To minimize bear-human interaction so as to avoid human injury and/or mortality as well as the displacement of grizzly bears either through forced relocation or mortality resulting from past human conflicts, over-harvesting or poaching.

(b) General Management Approach

The above intent will be achieved by applying the following general measures:

- conserving highly productive and/or critical feeding and breeding habitats, and ensuring bear access to these habitats
- setting road densities and objectives and managing access by designated units (access management measures will be refined through landscape level planning processes)
- using timber harvesting and silvicultural methods that sustain food production
- avoiding residential and recreational development-related conflicts
- eliminating improperly managed carnivore attractants (e.g., uncontrolled landfills)
- using landscape-level forest ecosystem networks (FENS) and regional connectivity corridors to provide dispersal corridors between areas of population concentrations (such as parks)
- allocating biodiversity emphasis as high or intermediate (as per the FPC) in appropriate areas (see map 3.2) within the constraint of 10-45-45 by district.
- a technical committee will be established to make annual recommendations to MOF District Managers regarding implementation of these guidelines through Forest Development Plans (FDP).

These guidelines will be refined through adaptive management. Their application will be reviewed to identify potential modifications which may improve the ability to meet the objective of enhancing Grizzly Bear habitat. The guidelines are intended to be applied with sufficient flexibility to allow site specific decisions which best fit individual landscape characteristics.

(c) Spatial Application of Guidelines

These guidelines apply to the Grizzly Bear Priority habitats, identified on map 3.4, which represent areas of high grizzly bear density and priority recovery areas. For the purposes of future lower level strategic and operational planning, the grizzly areas have been classified into priority 1, 2 and 3 habitat management areas that are derived from habitat suitability indices, as per Fuhr and Demarchi (1994), and a qualitative ranking of draft landscape units within forest districts.

As per the provincial Grizzly Bear Conservation Strategy, the grizzly bear management areas will be further defined and designated into a range of management types. These management units will provide for the management of site-specific grizzly bear habitats (e.g., denning and concentrated feeding sites) while ensuring integration with the KBLUP objectives and strategies. The grizzly bear habitats will be further defined based on the KBLUP interim landscape units and estimated population densities. Further inventory and mapping at the landscape level will identify critical carnivore habitats for operational level planning and decision-making and will be used as the basis for modeling seasonal carnivore habitat values and conducting a patch and landscape analysis.

Note: Implementation of the Grizzly Bear Conservation Strategy within the context of the KBLUP Implementation Strategy will continue over this next year and will result in refinements to these grizzly bear management guidelines. These refinements will be reflected in subsequent lower level planning (see Chapter 6, section 6.3). While the entire guidelines will be reviewed, the * symbol identifies the key aspects which are priorities for discussion. In the interim, the focus on grizzly bear management will be relative to avalanche chutes, access requirements, and site specific identification of feeding and denning sites.

In determining critical foraging, breeding or denning areas, consideration will be given to:

- The importance of the site on a landscape basis, including whether negative impacts on it could potentially limit local populations.
- Cumulative impacts (monitoring and analysis) of nearby developments and activities.
- Whether use of the site is spatially concentrated or dispersed (e.g., dispersed berry feeding areas versus a small riparian meadow with concentrated spring foraging for glacier lily corms).

In general, critical areas are defined as those sites which are essential to a grizzly bear's life history. The life requisite variables are food, shelter, breeding habitat, travel corridors and denning sites. The following areas are suggested:

- core population habitats
- post wildfire shrubfields
- active foraging sites
- avalanche tracks
- alpine meadows
- riparian habitats
- denning sites (active or potentially active; to be determined by inventory)
- ground squirrel colonies; ungulate calving areas
- other areas identified as critical.

These critical habitats will be identified by lower level strategic and operational levels. Buffers and/or access management should be maintained around critical habitats, except where greater environmental problems would be created by maintaining a complete reserve within the buffers (such as by re-routing roads into inappropriate locations).

3.4.2 Operational Guidelines

(a) *Interim Direction*

In order to more accurately apply guidelines, better information is required regarding grizzly bear densities and habitat usage. Through ongoing and future inventory and research, such information will be integrated into both lower level strategic and operational planning. In the interim, management of grizzly bears will be addressed using grizzly bear management units as defined by the Provincial Grizzly Bear Strategy (see section 3.4.1 (c)) and biodiversity emphasis option allocation as described in sections 3.2. Within the context of these biodiversity emphasis options, resource managers should, in the interim, seek to apply the intent of these guidelines through operational planning and decision-making with a priority focus on management of avalanche chutes and access requirements.

(b) *Forest Harvesting Guidelines*

Silvicultural systems commonly used in timber management are clearcuts, seed tree, shelterwood and single or group-tree selection. These methods can be used to enhance both grizzly food and cover and are discussed in more detail below. Specific harvesting guidelines are suggested as follows:

Clearcuts

- cutblock sizes should vary according to the patch size recommendations within the Biodiversity Guidebook and to site specific concerns that are identified at the LU and FDP level by BCE staff.
- edge can be maximized and sight distance reduced to 200m by creating an undulating cutblock boundary. If access is controlled, this guideline may be modified.
- * cuts should be planned so that adjacent harvested units qualify as useable hiding cover as indicated by an analysis of landscape patterns and stochastic distributions. Harvesting schedules between sub-drainages should also be alternated to meet cover requirements at a Landscape Unit scale.
- clearcuts should be screened from roads by leaving a strip of trees (for example, 50m) to promote bear use of early vegetative stages and to minimize poaching from access roads where appropriate.
- * avoid cutting areas adjoining meadows or other natural openings or foraging areas used by Grizzly Bears, as identified by BCE district staff (see buffers to foraging areas in the forage enhancement section of this guideline).

Partial Cutting

Partial cutting is important to retain an open forest canopy for grizzly food production, maintenance of adequate early spring forage and security cover. In general, important herbs and fruit bearing shrubs are benefited by selection cuts. * A specific recommendation for partial cutting is removal of 20 - 50% of the stands basal area, dependent on wind firmness of affected stand, where it can be accommodated as per the Forest Practice Code and biodiversity emphasis option allocation. Partial cutting may not be appropriate for shade intolerant species such as lodgepole pine when quick regeneration is needed or near clearcuts where adequate cover for travel, escape, and rest may not be available.

Age Structure

Long-term grizzly habitat management should maximize vegetation diversity, approximate natural conditions and include late successional stages. Specifically, managers should work toward maintaining a mosaic of age classes consistent with Grizzly Bear habitat requirements for a particular Landscape Unit. Wherever possible, the distribution should conform to the Biodiversity Guidebook for High and Intermediate Emphasis by NDT.

Seral Stages

Diversity of seral stages is generally the rule when managing forested lands for wildlife. However, some seral stages are of more value as grizzly habitat components than others. Specifically:

- early successional stages are valuable in producing grizzly foods (grasses, herbs, and fruits).
- mid-successional stages and pole-size stands of timber are of less value, particularly if they are dense, single species, even-aged stands.
- over-mature (A.C. 8+) and mixed aged stands should be retained for thermal cover and denning habitat.
- uneven-aged management should be used as it reduces disturbance and produces valuable food and cover species after each stand entry.

Forage Enhancement

In areas that are designated by BC Environment as being important for bear foraging, silviculture regimes should be compatible with the maintenance or enhancement of bear food production (e.g., as huckleberry, Hedysarum, horsetail).

Site preparation methods (Interagency Grizzly Bear Committee, 1986) include:

- prescribed-fire slash removal where it will enhance food production, provided that on some areas large coarse woody debris is maintained and burn intensity is regulated. The ration of intensity will be determined at a landscape scale using a stochastic distribution process.
- promote soil disturbance that creates establishment or growth of food plants.

Restocking prescriptions should aim for stand structure and composition similar to that present in adjacent blocks. Clumped tree distribution should be favoured over evenly-spaced stems. Existing openings or gaps in the stand should be identified prior to harvesting and used as the basis for PHSPs aimed at creating and maintaining gaps and clusters in the managed stand (Hamilton, 1994a).

Vegetation management activities should be restricted to the area immediately surrounding individual trees or clusters of trees. Motor-manual brushing is the preferred method. Treatments should be designed to directly reduce competition with crop trees, so grizzly forage species that are not direct competitors with crop trees will be avoided (Hamilton, 1994a).

Foraging habitats (including high elevation shrubfields, berry patches, alpine meadows, ungulate calving areas and ground squirrel colonies), where identified and mapped by BCE district staff, are to be avoided by managing access and buffering from planned roads and cutblocks. Buffer recommendations for these habitats are 100m on flat ground and greater on steeper slopes.

Timing of Activity

Past and future activities must be put in perspective and harvest planning should consider long term consequences. Cumulative effects analysis procedures are useful for determining the impacts of proposed logging activities on bear populations. Specific suggestions for scheduling harvesting activities follow:

- logging should take place at a time of little or no biological importance to bears.
- if possible, logging should take place in winter to minimize soil disturbance and compaction. If winter logging is feasible, operations should take place primarily in summer.
- logging should be concentrated into the shortest time frame possible.
- * logging operation should seek to concentrate the cut and associated activities, therefore providing areas of refuge for grizzly bears within other parts of the drainage. To achieve this intent, the following should be considered: operations should not take place simultaneously on adjacent areas (same or next drainage); a series of cuts at spaced periods to allow regeneration between harvest periods (i.e., 3m green up); large scale permits (>20% B.A. removal) should not be planned on adjacent watersheds (same or next drainage) within short (10-15 years) time intervals; these watersheds should be modeled to achieve optimum levels of Grizzly Bear conservation. Drainages should be alternated when accessed for resource extraction within landscape units, with one side of a watershed being utilized in order to concentrate harvesting impacts.
- timber harvest schedules should be coordinated with other land activities to reduce simultaneous impacts.
- harvesting should be scheduled to optimize vegetation responses beneficial to grizzlies.

Forest Management Adjacent to Snow Avalanche Tracks

In absence of a professional field assessment, the following provisions will apply:

- Snow avalanche tracks (i.e., slide chutes), which are recognized by BCE staff as significant carnivore habitats require establishment of Avalanche Track Management Zones (AMZs). The primary objective of AMZs is to ensure sufficient security cover is maintained adjacent to avalanche tracks frequented by carnivores.
- On slopes with a series of snow avalanche tracks alternating with strips of forest (>2 tracks/km or <500 m between tracks), there should be AMZs 50 m in width (or as available) established on both sides, and around the base of each avalanche track. On single or widely spaced avalanche tracks (≤ 2 tracks/km or >500 m between tracks), there should be AMZs 100 m in width established on both sides, and around the base of each avalanche track.
- Forest harvesting within the AMZs should emphasize retention of cover through the application of partial cutting systems, such as single tree selection or group selection. In general, the objective should be to maintain the stand structure and species composition present in unmanaged stands on similar sites. Tree removal should be

limited to approximately 20% of the pre-harvest basal area on one side of an avalanche track on single or widely spaced avalanche tracks. Areas between closely spaced avalanche tracks should be managed on long rotations with infrequent entries.

- Where possible snow avalanche tracks should be crossed at mid slope, and avoid crossings on runout zones in toe slope positions. Roads which cross avalanche tracks identified as critical carnivore habitat should provide temporary access only, and be closed when not in use.

Forest Management In Riparian Habitat

Riparian zones are heavily used by grizzlies for feeding and as travel corridors. While riparian areas can be opened up to produce bear foods such as wet site forbs and graminoids, special considerations must be taken when logging in, or near, these areas. The intent is to open up the riparian management zone for forage production, except within the riparian reserve which should be avoided for the purposes of timber harvesting. Specifically:

- Using FPC riparian guidelines for riparian habitats as per guidebook. In site specific stream areas ranked as significant Grizzly Bear habitats by BCE staff, consideration should be given to manage these habitats as sensitive areas.
- soil disturbance should be minimized particularly on mesic or hydric sites.
- riparian vegetation should not be altered within code designated reserves .
- low intensity broadcast burning or hand piling and spot burning are recommended as site preparation methods. High intensity burns on these sites may destroy rhizomes.
- riparian areas at the base of avalanche tracks should be managed to retain connectivity to upper elevations.

(c) Access Management

In critical grizzly bear habitats active, open forest road density (i.e., currently accessible by motorized vehicles) are generally too high to achieve the desired management for grizzly bears. MOF District Managers must consider ways to reduce these densities. Two pilot projects have been initiated to recommend road density targets by September 1998 that will not significantly affect short term wood supply and safeguard grizzly bears from displacement or harassment.

Targets will vary, depending on regional carnivore management planning, carnivore densities and factors influencing the effect of roads on carnivores, such as the shape of valley, volume of traffic, location of roads and junctions, timing of use, and visibility.

It is recognized that new roads built for the exclusive purpose of minerals, coal or oil and gas exploration and development, or for human settlement or to access private property and Land Act tenures, are relatively few. In areas of concern within grizzly bear habitat, new mineral/energy/settlement/access to private land road construction will be subject to an enhanced referral to identify specific operating conditions. In these rare cases where road density is at or

near limits, access in the short term will be closely monitored and managed (with possible gated or other closures) and target road densities may be temporarily exceeded. The permitting government agency must promptly notify the MOF District Manager of the development application. Operational planning will be initiated by government to determine how the targeted road density can be achieved. The siting and timing of construction and use for such roads will be subject to review within the context of these guidelines.

The process and general methodology for managing access within grizzly bear habitat, including strategies to be used to achieve the target road density, are summarized in the KBLUP Access Management Guidelines, section 3.12. However, specific direction for access management within and around critical grizzly bear habitat includes:

- emphasizing a concentration of resource development and active roads to small portions of a drainage at any one time, in contrast to concurrent dispersed development activities. For example, this may be achieved by limiting forest harvesting activity at any one time to certain tributaries of a valley, to one side of a valley, the upper or lower portion of a valley, or by closing off all side roads not leading directly to the areas of activity. Under this scenario, all forest harvesting roads should be closed in the portion of the drainage that was originally active before moving into the next portion of the drainage. Where necessary, roads for other resource activities will be regulated through specific permitting conditions identified through an enhanced referral.
- avoiding roads, where possible, in high-elevation post-wildfire shrubfields, riparian habitat, seepage areas and avalanche slopes.
- identifying specific measures through resource development plans that result in effective permanent or seasonal closures, such reclaiming road designed for short-term access to cutting and/or mineral exploration areas and designing main haul roads to incorporate effective physical road closures at impassable barriers, such as river crossings.
- until the Grizzly Bear Conservation Strategy has identified Conservation, Recovery, Benchmark and Sustainable Areas and associated priorities for access management, the priority for access management planning and activities will be where priority grizzly bear habitat overlaps with regional connectivity corridors (see section 3.3).

(d) *Attractant Management*

Locations for new sanitary landfills should avoid Conservation Management Areas (as per the Grizzly Bear Conservation Strategy). Where this is not possible, there should be a waste management plan/permit which must include plans to minimize attractants for Grizzly Bears.

Existing landfills in Conservation Management Areas should be reviewed by BCE staff, and where necessary, a management plan developed to minimize attraction to the area. If landfills occur in key bear habitat and there is a history of problem bears, they should be closed or modified as bear-proof.

All work camps in bear habitat should incinerate garbage at least daily, or provide bear-proof garbage containers. These requirements should be included in all permits for activities involving the establishment of camps. All Ministry of Forests, BC Parks and private campsites should eliminate waste disposal containers and require users to independently store and remove their waste from the site.

(e) *Range Management*

Expansion of range tenures (cattle, horses or sheep) and sheep vegetation management should be avoided in Grizzly Bear habitats, unless it can be shown these activities will have no adverse impacts on bear populations.

If there is evidence of damage to critical carnivore habitat from domestic grazing in bear habitats, existing range tenures in those areas should be reviewed, and range management plans revised to eliminate the problem. In some cases it may be necessary to consider a temporary cessation of activities, or even cancellation, to resolve a bear-human or carnivore-livestock conflicts.

(f) *Recreational Development*

Within Grizzly Bear habitats, environmental impact assessment for new construction or expansion of resorts, backcountry cabins, trails and other recreational developments should include an evaluation of potential impacts on carnivores. Development plans may include monitoring of activities and impacts on carnivore habitat and populations to ensure that limits of acceptable change are not exceeded.

(g) *Predator Control and Hunting Management*

Hunting regulations for grizzly bears and prey species, including hunting access restrictions, should be coordinated with the both Provincial Grizzly Bear Strategy and the BC Environment Harvest Strategy.

(h) *Inventory and Research*

In order to develop better information for refining these guidelines at the lower level strategic and operational levels, licensees will be encouraged to submit proposals for FRBC funded inventory projects (minimum 3 years) using approved MOELP standards for Grizzly Bears within license areas rated as priority 1, 2 and 3 Grizzly Bear habitats by MOELP staff. Long term inventory projects enable biologists and forest managers to improve both landscape and stand level guidelines.

3.5 Ungulate Winter Range Management Guidelines

3.5.1 Introduction

(a) *Guideline Intent*

To ensure that viable populations of ungulate species including elk, white tailed deer, Rocky Mountain Bighorn sheep, California Bighorn sheep and moose, are maintained. To achieve that goal, these guidelines provide direction with respect to the location, preferred type, distribution and attributes of forest cover, as well as the access management, required to maintain suitable habitat conditions which support the variety and populations of ungulate species.

To minimize displacement of ungulates resulting from poaching and development activities within designated winter ranges.

Within the context of the Kootenay Boundary Land Use Plan (K.B.L.U.P.), management of ungulate species is linked to the management of predator species as healthy populations of prey species is necessary to maintain viable populations of large carnivores.

(b) *General Management Approach*

The above intent will be achieved by applying the following measures:

- The guidelines are intended to be applied with sufficient flexibility to facilitate management decisions which compliment desired habitat characteristics over the landscape.
- Management guidelines are intended to be applied by the Biogeoclimatic Ecosystem Classification (B.E.C.) system for all identified ungulate winter ranges throughout the Kootenay region or the managed forest ecosystem component, expressed in the “Management Guidelines For Fire Maintained Ecosystem Restoration” document.
- Management efforts to enhance the suitability and carrying capacity of all other identified ungulate winter range components in N.D.T.4, should be consistent with the operational schedules and appropriate management techniques stipulated through the fire maintained ecosystem restoration guideline direction.
- In the Cranbrook and Invermere Districts, forest cover stocking standards on the ungulate or forage leading polygons identified in the Trench Integrated Renewable Resource Management (T.I.R.R.M.) plan, should be consistent with fire maintained ecosystem restoration guideline direction. As this exercise has not been conducted in other Forest Districts within the Kootenay Region, the stocking standards specific to all ecosystem components expressed in the ecosystem restoration guidelines matrix will apply.
- Improve the identification and accuracy of all ungulate winter ranges within the Kootenay region.
- Utilize available information regarding specific winter range locations, the ranking of species in order of priority for each range and application of specific operational direction to develop appropriate management regimes. Decisions regarding species management priorities can be determined from existing biophysical information, however, this is not an entrenched rule and flexibility is open for interpretation by the appropriate resource managers.
- Manage the identified winter ranges for the optimal amount, quality and arrangement of security and snow interception cover and forage resources. These habitat management objectives will vary according to the target species, local climate and residual habitat conditions.

- Manage access development and use, consistent with the Access Management Guidelines (section 3.12), to minimize ungulate displacement, habitat degradation or loss and vulnerability to over-harvesting or poaching.
- Within identified winter ranges, ensure that management of other resources is consistent with habitat management goals for ungulates.
- Consistent with Provincial biodiversity guideline direction, the old growth sere will be maintained and distributed throughout all B.E.C. units in identified wildlife winter ranges.
- Consistent with biophysical attributes, forest habitat cover should be arranged to maintain the most suitable connectivity, interior forest conditions and edge attributes.

(c) Access Management

The primary method of meeting the guideline intent of minimizing habitat loss and the displacement of ungulates from designated winter ranges will be achieved through management of road densities and active use of roads in and around high capability winter habitats. Strategically, road densities should be managed, within the mapped winter ranges, at <3km./km. squared by 250 ha. units. If this road density target cannot be met, appropriate rationale must be provided. Road density targets will be refined in conjunction with winter range status and incorporated into both lower level strategic and operational planning and negotiation processes.

It is recognized that new roads built for the exclusive purpose of minerals, coal or oil and gas exploration and development, or for human settlement to access private property or Land Act tenures, are relatively few. In areas of concern within ungulate winter range, new mineral/energy/settlement road construction will be subject to an enhanced referral to identify specific operating conditions. In the rare cases where road density is at or near limits, access in the short term will be closely monitored and managed (with possible gated or other closures) and densities may be temporarily exceeded. The permitting government agency must promptly notify the MOF District Manager of the development application. Operational planning will be initiated to determine how the targeted road density can be achieved. The siting and timing of construction and use for such roads will be subject to review within the context of these guidelines.

The process and general methodology for managing access within winter ranges, including strategies to be used to achieve the target road density, are summarized in the K.B.L.U.P. Access Management Guidelines, section 3.12. However, specific direction for access management within ungulate winter ranges includes:

- Through the existing Forest Development Planning process, a comprehensive, integrated access management plan, which addresses the complete spectrum of natural resources and resource user requirements on identified winter ranges must be developed.
- Development of permanent roads should be avoided in ungulate winter ranges.
- New roads should be permanently closed to conventional vehicular use on completion of forest harvesting, silviculture or other resource development activities.
- Motorized use of roads situated within winter ranges, should be seasonally scheduled, wherever possible, to minimize harassment and displacement of ungulates from preferred habitats during the winter months. This recognizes that some roads, required for human settlement purposes (including access to private resorts and private land) and industrial activities do require winter access, but will seek to meet the intent of the guideline.
- Use of existing main line forestry related road access, which traverses through winter range areas, will be maintained. However, if these roads are not required for use on a daily basis they should be subject to seasonal use scheduling.

(d) *Spatial Application Of Guidelines*

These management guidelines apply to the species specific polygons depicted on the K.B.L.U.P. ungulate winter range map (see map 3.5) or re-inventoried versions. The identified areas represent known, critical ungulate winter habitat. Where a particular geographic area provides habitat for more than one priority ungulate species, a “leading” ungulate species has been mapped at the 1:500,000 scale. (These maps are available for lower level strategic and operational planning). Where this occurs, the intent is to apply the operational guidelines for the leading species for that geographic area. However, if necessary, more than one guideline set can be applied on a 250 ha. management unit.

Within the areas indicated on the regional winter range map, management regimes will vary according to B.E.C. sub-zone, variant and priority species as indicated in the operational guideline table.

3.5.2 Operational Guidelines

Forest Cover

Table 1: Forest Cover Guidelines

Species	Guideline Set	Biogeoclimatic Ecosystem Classification Subzone Variants	Minimum Amount of Mature Forest Cover Retention Over the Managed Forest Land Base	Habitat Management Objective	Rationale/Comments
Elk Mule Deer	1a slopes <50%	PPdh1, PPdh2, IDFdm1, IDFdm2, IDFun, IDFxh1, ICHxw, MSdk (only on site series 2 & 3 on slopes >50%)	25% forest cover comprised of 101+ yr. old trees, with an ave. crown closure of 50% in units >10 ha. every 250 or suitable multiples up to planning cell scale.	<ul style="list-style-type: none"> - Maintain a relatively high component of forest cover to support foraging, security, snow interception cover and connectivity requirements. - Maintain mature forest cover at the optimum distance to forage sites. 	Slopes <50% usually retain deeper snow than slopes >50%. Mature trees, particularly Fd, frequently have the structural attributes which optimize foraging, cover and movement opportunities on these sites.
Elk Mule deer	1b southern aspects >50%)	PPdh1, PPdh2, IDFdm1, IDFdm2, IDFun, IDFxh1, ICHxw, MSdk (only on site series 2 & 3 on slopes >50%)	15% forest cover comprised of 101+ yr. old trees, with an ave. crown closure of 50% in units >10 ha. every 250 or suitable multiples up to planning cell scale.	<ul style="list-style-type: none"> - Maintain thermal cover and litterfall opportunities. - Contribute to habitat diversity management objectives. - Maintain a high forage to cover differentiation. 	Steeper slopes, on southern aspects, receive a higher degree of solar radiation, have less snow and consequently can be managed to a wider spacing and a lower retention component of mature trees.
Elk	1c	MSdm1, MSdk, except site series 2 & 3, ICHdw, ICHmk1, ICHmw1,2 & 3, ICHvk1, ICHwk1, ESSFdk	30% forest cover comprised of 101+ yr. old trees, with an ave. crown closure of 60% in units >20 ha. every 250 or suitable multiples up to planning cell scale	Maintain a relatively high component of forest cover to support foraging, security and snow interception cover and connectivity requirements.	Deep snow is often prevalent on these winter range habitats. Dense stands with interlocking crowns provide the required attributes to facilitate foraging and movement opportunities
Whitetail deer	2a except beside avalanche tracks	PPdh1, PPdh2, IDFdm1, IDFdm2, IDFun, IDFxh1, ICHxw, MSdk (only on site series 2 & 3)	<p>30% forest cover comprised of 101+ yr. old trees, with an ave. crown closure of 50% in units >20 ha. every 250 or suitable multiples up to planning cell scale</p> <p>15% forest cover for whitetail deer late winter range on slopes >50%</p>	<ul style="list-style-type: none"> - Maintain suitable security, snow interception cover and connectivity habitat values. - Maintain mature forest cover at the optimum distance to forage sites. - Maintain a high forage to cover differentiation.. 	Retention of mature trees, particularly Fd, provide the most suitable structural attributes required to optimize the habitat management objectives for whitetail deer. See 1a and 1b for forest cover retention variation.

Species	GuidelineSet	Biogeoclimatic Ecosystem Classification Subzone Variants	Forest Cover Retention Over the Managed Forest Land Base Minimum Amount of Mature	Habitat Management Objective	Rationale/comments
Whitetail deer	2b	MSdm1, MSdk, except as noted in 1a & 1b, ICHdw, ICHmk1, ICHmw1,2 & 3	40% forest cover comprised of 101+ yr. old trees, with an ave. crown closure of 60% in units >20 ha. every 250 or suitable multiples up to planning cell scale	- Maintain snow interception , security, thermal cover,litterfall and connectivity - Maintain mature forest cover in close proximity to forage sites	Deep snow is often prevalent on these winter range habitats. Dense stands with interlocking crowns provide the required attributes to facilitate foraging
Whitetail deer Elk Moose Mule deer	3 adjacent to avalanche tracks	All B.E.C.'s	70% basal area retention within a 100 to 200 metre strip on either side of the track comprised of 120 year old trees with an ave. crown closure of 60%.	- Maintain mature forest cover in close proximity to forage sites. - Maintain connectivity, security cover, snow interception cover, thermal cover and litterfall	Deep snow is often prevalent on these winter range habitats. Dense stands with interlocking crowns provide the required attributes to facilitate foraging and movement opportunities.
Mule deer	4	MSdm1, MSdk, except as noted in 1a & 1b, ICHdw, ICHmk1, ICHmw1,2 & 3 ICHvk1, ICHwk1,ESSFdk	35 - 55% forest cover comprised of 101+ yr. old trees. In the Boundary F.D. , 121+ trees, with an ave. c.c. of 60%. in units >20 ha. every 250 or suitable multiples up to planning cell scale	- Maintain snow interception, security cover and litterfall - Maintain mature forest cover in close proximity to early spring forage sites. - In the Boundary F.D., snow interception is the principle management objective	Deep snow is often prevalent on these winter ranges. Dense mature Fd stands with interlocking crowns provide the required attributes to facilitate foraging and movement opportunities.
Rocky Mountain Bighorn Sheep	5 (subalpine/ alpine grassland) 300 m. area adjacent to grassland habitat.	ICHvk1, ICHwk1,ESSFdk	70% basal area retention within a 300 m radius of grassland. Forest cover comprised of 121 to140+ year old trees with an ave. crown closure of 60%. Distribution units should be established within a 300 m. radius of grassland habitat.	- Maintain 100% retention of Pa parkland. - Maintain thermal cover retention adjacent to foraging habitats	Mature trees, with a high crown closure or interlocking limb component provide the structural attribute required to meet this objective.
Moose	6	PPdh1, PPdh2, IDFdm1, IDFdm2, IDFun, IDFxh1, ICHxw, MSdk (only on site series 2 & 3 on slopes >50%)	40% forest cover comprised of 82 to 100+ year old trees, with an ave. crown closure of 50% in units >20 ha. every 500 or suitable multiples up to planning cell scale	- Maintain snow interception, security cover, and connectivity - Maintain mature forest cover in close proximity to forage sites.	In the drier subzones, snow depth is usually not an issue. However, deep snow is often prevalent on the moister subzones. Dense stands with interlocking crowns provide the required attributes to facilitate foraging and movement opportunities.
Moose	7	ICHvk1, ICHwk1,ESSFdk MSdm1, MSdk, except as noted in 1a & 1b, ICHdw, ICHmk1, ICHmw1,2 & 3	50% forest cover comprised of 121 to 140+ year old trees, with an ave. crown closure of 70% in units >20 ha. every 500 or suitable multiples up to planning cell scale	- Maintain snow interception, security cover, and connectivity - Maintain mature forest cover in close proximity to forage sites.	Deep snow is often prevalent in these subzones. Dense, mature stands with interlocking crowns provide the required attributes to facilitate foraging and movement opportunities

Definitions

Forest Cover Distribution

Spatial distribution of forest cover should be established in 250 hectare units. To facilitate planning or analysis requirements, these units can be amalgamated into multiples or nested within current interim planning cells, landscape units or watersheds.

Forest Cover Location

- The most suitable locations to maintain and connect forest cover, would be along distinct topographic breaks and on ridges or knolls. Mature forest cover components located in these areas can function in the capacity of security, thermal and snow interception cover and will also facilitate secure diurnal and seasonal ungulate movement requirements.

Optimum Habitat

- Optimum habitat refers to the amount and arrangement of cover and forage area that results in the maximum possible use of a specific land base by ungulates.

Optimum Cover

- The optimum dimensional characteristic of a patch of cover could range from 183 meters to 366 meters.

Optimum Forage Area

- For maximum use by ungulates forage areas should have no point in excess of 183 meters from the cover edge.

Mature and Old Growth Structural Characteristics

- As opposed to younger forests, the structural attributes associated with mature or old growth forest stands often contribute to a higher habitat suitability factor on ungulate winter ranges. The principle attribute contributions include; increased forage opportunities associated with needle and lichen litterfall (Fd needles have a higher inherent nutrient value than needles from immature trees), fewer numbers of stems per hectare and a predominately wide crown radius of individual trees. The latter attribute, particularly if the crowns interlock, accommodate ease of movement and enhance foraging opportunities beneath the forest canopy through enhanced snow interception capability. Lower age class surrogates may provide some of the preferred requirements, however, not having the same structural characteristics, that are associated with mature stands, they do not usually have the capacity to fulfill all the essential habitat elements to the same degree as mature forest cover stands.
- Mature forest cover retention
As stated in the forest cover guideline matrix, mature cover is the minimum percentage of mature forest habitat determined to be the most appropriate for a specific ungulate species by B.E.C. unit by distribution unit. The recommended forest cover percentages relate to 100% forest cover by area and apply to the managed forest component expressed in the fire maintained restoration guidelines.. The preferred species and desired characteristics are also expressed in table 2 of the guidelines.

Preferred Forest Cover Species

- As expressed in the guideline matrix, Douglas fir is the species on which the emphasis of retention will be focused. In relation to other species, Douglas fir has the most suitable inherent structural attributes which contribute to increased foraging opportunities, ungulate mobility high snow interception, thermal cover and security cover capability.

Forest Cover Components

Security cover

- Security cover is defined as vegetative habitat or topographic attributes which have the capability to enable ungulates to conceal themselves. Forest stand attributes which provide this cover characteristic should be at least 5ha. in size with a minimum stem height of 2 meters. Stem density is also an influential factor, however, the number of stems per ha. will vary in conjunction with ecosystem component designation and management objectives. On a site specific basis, cover provided by shrubs (height > 2m) may also be considered as security cover . Where required on steep slopes (>70%), greenup should exceed 3 meters in height to provide adequate security cover for ungulates.

Snow interception cover

- Snow interception cover is defined as tree crown attributes which have the capability to intercept snow. As this capacity will often vary in conjunction with the size, shape, stem density and species of tree, it is important to retain species which have the structural attributes which will have a distinct influence on snow interception capability. In this regard mature Douglas fir, Ponderosa pine or dense intermediate age Douglas fir are preferred. As this variable often is the limiting factor for winter survival in areas with moderate to high snow accumulation, the selection and location of species with suitable structural characteristics is extremely important.

Thermal cover

- Thermal cover is defined as forest habitat which has the capability to assist ungulates in maintaining a constant body temperature. Stand attributes which have the potential to provide this cover characteristic are comprised of multi-layered stands, a height class of 2+, a crown closure class of 6+, are at least 20ha. in size and have a minimum width of 400 m.

Connective cover

- Residual forest cover components should be interconnected through retention of corridors of mature forest (age class #5+) at least 200m. in width. This characteristic should occur in all landscape units to ensure suitable forest cover linkages are maintained within the identified winter ranges and between summer and winter use areas.

Special habitat protection cover

- Special habitat features such as identified mineral licks, wallows, calving grounds or exceptional foraging areas should have a designated forest management zone, which precludes permanent access, maintained around the perimeter of the site.

Forest harvesting

In an effort to reduce physiological stress, at a time when over wintering ungulates are at their lowest energy level, forest harvesting activity should be concluded by mid winter.

3.6 Mountain Caribou Management Guidelines

3.6.1 Introduction

(a) Guideline Intent

To provide the amount and distribution of habitat required to maintain viable populations of the several distinct herds of blue-listed mountain caribou.

To minimize displacement of mountain caribou resulting from development and recreational activities in critical habitat.

Within the context of the KBLUP, mountain caribou are being used as an umbrella species, in that the application of the guidelines, in combination with the biodiversity emphasis option allocation (see section 3.2) is intended to address the needs of old growth dependent species in those ecosystems, at least until further information about such species allows for more specific management direction to be developed.

Note: Ongoing discussions within the scientific community and within the context of the emerging Provincial Caribou Strategy will result in refinement of these guidelines. These refinements will be reflected in subsequent lower level planning (see Chapter 6, section 6.3). In the interim, the focus will be on the General Forest Management Direction (section 3.5.2) and access management and the following guidelines apply:

In caribou habitat areas;

- a. Old growth retention by draft landscape unit is:
ESSF, a minimum of 30% of the operable landbase in age class 8 or older of which at least one third must be in age class 9, in the ICH a minimum of 40% of the operable landbase in age class 8 or older of which at least one quarter must be in age class 9.**
- b. Access Management:
Restrict snowmobiling to areas outside late winter range habitat
Avoid road access in the upland Parkland areas and;**
- c. Remainder of the guidelines are still under development and only the ** sections of the following guidelines will apply**

(b) General Management Approach

The above intent will be achieved by:

- designation of caribou habitat management areas which include a full range of seasonal habitats, including spring, calving, summer, rut, early winter and late winter, and movement areas between habitats. The management areas should be sufficient in size to maintain viable numbers of all populations within the region.
- within caribou habitat management areas, ensure that a sufficient proportion of the land base is maintained in old growth forests on a continuous basis, from tree line down to the lowest elevations used by caribou.
- maintaining continuous, broad corridors of old growth and mature forest at regular intervals to connect larger pockets of old growth forest.
- managing access to and within caribou habitat management areas to minimize disturbance and illegal harvest (access management measures will be subject to review by local level planning processes).

(c) Spatial Application of Guidelines

The mountain caribou management guidelines apply to the caribou habitat areas identified in map 3.6. These areas represent known, critical caribou habitats based on radio telemetry data, aerial census data, caribou habitat and biophysical mapping and known sitings. Within the areas shown on map 3.6, the operational guidelines respecting maintenance of forest cover vary by seasonal caribou habitat requirements.

3.6.2 Operational Guidelines

(a) Forest Management

General

- Within the ESSF, a minimum of 30% of the landbase below the 1994 operability line will be in age class 8 or older, of which at least 1/3 must be in age class 9. On an additional 20% of the landbase below the 1994 operability line partial cutting is acceptable so long as the ECA will not exceed 35% total, with greenup defined as age class 7 or greater.
- Within the ICH, a minimum of 40% of the landbase will be in age class 8 or older, of which at least 1/4 will be age class 9.
- Basal area retention above the 1994 operability line is 70%.
- Rotation ages for all habitats is 151 years.
- Cutblock sizes will vary from 0.25-100 ha depending on landscape unit planning processes and habitat type in ESSF.
- Slope classes for guideline application will be less than 80%. **
- Timber harvesting will be confined to the landbase outside upland parkland areas. **

Stand-level management objectives and silvicultural strategies for winter habitat **

Habitat management objective	Applicable season/zone ¹			Rationale/comments	Suggested silvicultural objectives	Silvicultural strategy
	EW-ICH	EW-ESSF	LW-ESSF			
windfirm habitat	•	•	•	<ul style="list-style-type: none"> natural sporadic blowdown is a source of forage, but the stand as a whole should be windfirm 	<ul style="list-style-type: none"> windfirm stand 	<ul style="list-style-type: none"> maximum volume removal approximately 30% (excluding roads and landings)
contiguous future habitat	•	•	•	<ul style="list-style-type: none"> maintain habitat contiguity in space and time; minimize susceptibility to catastrophes 	<ul style="list-style-type: none"> basically healthy stand 	<ul style="list-style-type: none"> 1. careful logging including: <ul style="list-style-type: none"> direction falling placing bunches to minimize bole and branch damage skidding to minimize bole damage 2. post-harvest sanitation cutting if necessary
maintain preharvest species composition	•	•	•	<ul style="list-style-type: none"> caribou prefer B and BS forest types to S and SB 	<ul style="list-style-type: none"> maintain pre-harvest species composition and size class distribution 	<ul style="list-style-type: none"> marked to cut to retain specified mixture of species
abundant aboreal forages lichens available on standing trees	•	•	•	<ul style="list-style-type: none"> adequate forage abundance is necessary to maintain use by caribou snag retention may be necessary if a high proportion of lichen biomass is on snags lichen abundance is low on trees with few branches or dense, tangled branches; dense branches hinder access to lichen (<50% of lower tree branches covered) 	<ul style="list-style-type: none"> significant component of trees ≥ Class 3, including some of Classes 4 and 5² moderate branchiness below 4.5m a range of diameter classes retained 	<ul style="list-style-type: none"> maximum volume removal approximately 30% (excluding roads and landings) spread volume removal over appropriate classes to retain snags use feller-buncher and grapple skidders (WCB variance is necessary)
abundant arboreal forage lichens available as litterfall	•	•		<ul style="list-style-type: none"> adequate forage abundance is necessary to maintain use by caribou lichen-bearing snags produce litterfall as the branches break and bark sloughs off 	<ul style="list-style-type: none"> significant component of mature, lichen-bearing trees a component of declining trees/snags (Wildlife Tree Classes 2-4)³ 	<ul style="list-style-type: none"> maximum volume removal approximately 30% (excluding roads and landings) spread volume removal over appropriate classes to retain snags use feller-buncher and grapple skidders (WCB variance is necessary)

snow interception	•	•		<ul style="list-style-type: none"> • fresh soft snow covers ground forage and litterfall, and makes movement difficult 	<ul style="list-style-type: none"> • manage for snow interception in all or part of stand • high canopy closure • dense, wide, long crowns • multilayered structure 	<ul style="list-style-type: none"> • low volume removal • group selection better than single tree selection • unlogged reserves may be left within stand
maintain low evergreen shrubs where they occur; avoid enhancing forage for moose and deer	•	•		<ul style="list-style-type: none"> • low evergreen shrubs important before snow is deep, especially in the ICH • enhancing habitat for moose and deer may increase wolf populations or attract them to caribou ranges 	<ul style="list-style-type: none"> • minimize disturbance of soil and vegetation 	<ul style="list-style-type: none"> • keep harvesting or site preparation activities that disturb the forest floor to an absolute minimum (e.g., winter log on snowpack, spot scarify, or plant without scarifying)
minimize visual obstructions	•	•	•	<ul style="list-style-type: none"> • caribou seem to prefer areas where they can see around them; there is evidence that they avoid areas where tall shrubs, conifer regeneration, or obstructions restrict visibility • this management objective applies also to stands used by caribou during snow-free seasons 	<ul style="list-style-type: none"> • regeneration density control to lower limits of silvicultural acceptability - see silvicultural standards as per FPC. 	<ul style="list-style-type: none"> • regeneration may be widely dispersed, as in single tree selection for uneven-aged management under low q values (<1.5); or • regeneration may be concentrated into patches providing visibility is good in adjacent areas
maintain stand level connectivity	•	•	•	<ul style="list-style-type: none"> • caribou seems to prefer areas where movement is not obstructed by debris or vegetation • this management objective applies also to stands used by caribou during snow-free seasons 	<ul style="list-style-type: none"> • avoid excessive physical obstructions (e.g., windthrown slash, many down trees) 	<ul style="list-style-type: none"> • thorough slashing of logging debris, especially if in large quantity.

Interim prescriptions for selection silvicultural systems in mountain caribou habitat with reference to effective pre-harvest stand structure		
Effective Pre-harvest Stand Structure	Single Tree Selection System	Group Selection System
Single-storied Stand Structure	Conversion to multi-stories stand structure requires several light stand entries. Maintain at least 75% of initial basal area per cut. Protect and maintain high-rated lichen-bearing trees. Mineral soil exposure needed to promote natural spruce regeneration. Moderate (40+ year) cutting cycle.	The following applies to all partial cutting using group selection in caribou habitat (exceptions are noted): <ul style="list-style-type: none"> • each stand entry should remove no more than 30% of the stand by volume or area, including skid trails. • small opening sizes (<0.5 ha) are probably best for caribou habitat and stand windfirmness.
Two-storied Stand Structure	One or more moderate stand entries to release thrifty C2 (pole-sized intermediate trees), stimulate seed production in overstory, and promote understory regeneration. Maintain about 66% of initial basal area and B-level stocking. Protect high-rated lichen-bearing trees. Protect pole-sized trees during felling and skidding. Long (75+ year) cutting cycle.	<ul style="list-style-type: none"> • if protection of advance regeneration within openings is desired then winter logging on snowpack will help. • mineral soil exposure or microsite planting may facilitate regeneration of desired species.
Multi-storied Stand Structure	Stand entries must maintain and enhance existing structure, species composition, quality, and stocking. Retention of about 66% of initial basal area is acceptable depending on the wind exposure of the stand. Maintain at least 20 m ² /ha (approx.) of basal area per entry. Protect and maintain high-rated lichen trees.	<ul style="list-style-type: none"> • group selection must be used if snag retention using feller-buncher harvesting is a stand management objective. • long cutting cycles (75+ years) are necessary for long term lichen biomass retention.
Irregular Stand Structure	At least one stand entry needed, possible as an improvement cut, to promote the desire multi-storied stand structure and allow basal area stocking to increase over time to acceptable minimum levels (20 m ² /ha approx.) or more. An extended cutting cycle will be necessary to allow basal area stocking to recover.	<ul style="list-style-type: none"> • for stands with irregular structure an extended cutting cycle will be necessary if basal area is very low initially.

(b) *Access Management*

Road density, coupled with the volume of motorized traffic, has a negative affect on caribou. Efforts are being made to identify thresholds of road density and recreational use within prime caribou areas.

It is recognized that new roads built for the exclusive purpose of minerals, coal or oil and gas exploration and development, or for human settlement to access private property or Land Act tenures, are relatively few. In areas of concern within caribou habitat, new mineral/energy/settlement road construction will be subject to an enhanced referral to identify specific operating conditions. In the rare cases where road density is at or near limits, access in the short term will be closely monitored and managed (with possible gated or other closures) and densities may be temporarily exceeded. The permitting government agency must promptly notify the MOF District Manager of the development application. Operational planning will be initiated to determine how the targeted road density can be achieved. The siting and timing of construction and use for such roads will be subject to review within the context of these guidelines.

The process and general methodology for managing access within critical caribou habitat, including strategies to be used to achieve the target road density, are summarized in the KBLUP Access Management Guidelines, section 3.12. However, specific direction for access management within and around critical caribou habitat includes:

- an emphasis on zoning for recreational activity to restrict snow-mobiling to areas outside of late winter range habitat **
- avoid road access in the upland parkland areas wherever possible.**

3.7 Watershed Management

3.7.1 Introduction

(a) *Guideline Intent*

To provide a clear definition of “community watersheds” and “domestic watersheds”. To acknowledge that community watersheds will be managed as per the Forest Practices Code Community Watershed Guidebook. To provide management guidance for forest and mineral exploration activities in domestic watersheds.

The intent of this guideline is to be consistent with provincial policy on the management for domestic watersheds. As this policy is currently just emerging, these guidelines will be reviewed at the time the policy is finalized to ensure consistency.

(b) *Definitions*

General

The intent of the community watershed definition is to capture watersheds which serve as important water supplies for legally organized user groups such as municipalities, regional district areas, improvement districts, utilities and water users’ communities. These user groups generally utilize water systems which are built to higher standards and service many properties.

The intent of the domestic watershed definition is to capture watersheds which support domestic licensing but where the water users have not incorporated themselves and frequently utilize individual water systems.

Community watersheds are defined in the *Forest Practices Code of British Columbia Act* as follows:

- 41 (8) For the purposes of subsection (6) “community watershed” means
- (a) the drainage area above the downstream point of diversion on a stream for a water use that is for human consumption and that is licensed under the *Water Act* for
 - (i) a waterworks purpose, or
 - (ii) a domestic purpose if the license is held by or is subject to the control of a water users’ community incorporated under the *Water Act* if the drainage area is not more than 500 km² and the water license was issued before June 15, 1995, or
 - (b) an area that is designated as a community watershed under subsection (10) to (11).
- 41 (9) In subsection (8) “domestic purpose” and “waterworks purpose” have the meaning given to them in the *Water Act*.

- 41 (10) The regional manager of the Ministry of Forests may designate an area as a community watershed if
- (a) in the opinion of the regional manager and a designated environmental official (regional water manager) it should be designated as a community watershed,
 - (b) the area is all or part of the drainage area above the downstream point of diversion for a water use that is for human consumption and that is licensed under the *Water Act* for domestic or a waterworks purpose, and
 - (c) the area is not referred to in subsection 8(a).
- 41 (11) With the agreement of the designated environment official, the regional manager may by written order vary or cancel an area's status as a community watershed whether the area is defined to be a community watershed under subsection 8(a) or designated to be a community watershed under subsection 8(b).

A **Domestic Watershed** is defined as the drainage area above the downstream point of diversion on a stream which is:

- (a) licensed under the *Water Act* for human consumption;
- (b) not classified as a community watershed under the *Forest Practices Code of British Columbia Act*;
- (c) usually not more than 200 km² in drainage area.

Note: The area above the downstream point of diversion may include a significant proportion of private land which is not within the jurisdiction of the Forest Practices Code. It should be understood that the domestic watershed guidelines apply to the Crown land portion of the watershed although private land owners are encouraged to adopt these practices as well.

(c) General Management Approach

Community watersheds will be managed as per the Forest Practices Code Community Watershed Guidebook.

Domestic watersheds: These guidelines define a level of management for forest activities on Crown land in domestic watersheds which lies between standard Forest Practices Code and management in community watersheds. It does this by providing:

- a) a classification and mapping system for domestic watersheds;
- b) a basic assessment of hazard related to forest activity;
- c) a set of recommended forest practices;
- d) a strengthened opportunity for public input to the forest development plan;
- e) a contingency plan in case of damage to water supply.

The guidelines also outline management and practices for mineral exploration activities in domestic watersheds. Large scale mining and related activities are reviewed under the

Environmental Assessment Act. This process involves detailed socio-economic and environmental assessment of the project, and considerable opportunity for public consultation.

Smaller mining projects (those that do not meet the Environmental Assessment Act thresholds) are reviewed by a regional multi-agency committee. This review process offers the opportunity for public consultation.

For forest activities, the responsibility to implement the Domestic Watershed Guidelines rests with:

- a) Environment and Lands, to develop and maintain the classification and mapping system and to provide advice during the forest development plan process on high risk/consequence areas on a priority basis;
- b) the forest activity proponent to complete the assessment, modify the forest development plan (FDP) to address hazards, incorporate appropriate forest practices, notify water users of the opportunity for involvement, address water users concerns during the FDP process, and in general, to ensure that activities are conducted in such a manner that water quality, quantity and timing of flow will be maintained;
- c) Ministry of Forests to review, recommend modifications and approve the forest development plan if it complies with the Forest Practices Code and the KBLUP objective of maintaining water quality, quantity and timing of flow in domestic watersheds;
- d) water users to attend FDP presentations, review impact assessments and plans, propose constructive technical improvements to meet stated objectives, notify agencies if problems are identified so that corrective action can be taken; to construct and maintain water works that are capable of handling natural water quality and flow levels;
- e) all parties during emergencies requiring contingency plan implementation.

For mineral exploration activities, the responsibility to implement the Domestic Watershed Guidelines rests with:

- a) Environment and Lands, to develop and maintain the classification and mapping system and to provide advice on high risk/consequence areas on a priority basis;
- b) the mineral exploration proponent to complete a satisfactory Mines Act permit application, to address hazards, incorporate appropriate exploration practices, notify water users of the proposed mineral exploration works, and in general, to ensure that activities are conducted in such a manner that water quality, quantity and timing of flow will be maintained;
- c) Ministry of Employment and Investment to review, recommend modifications and approve the Mines Act permit applications if it complies with the Mineral Exploration Code and the Mines Act, and is consistent with the KBLUP objective of maintaining water quality, quantity and timing of flow in domestic watersheds;
- d) water users may attend pre-approval on-site inspections if required; propose constructive technical improvements to meet stated objectives; notify agencies if problems are identified so that corrective action can be taken; to construct and maintain water works that are capable of handling natural sediment and flow levels;
- e) all parties to cooperate during emergencies requiring remedial or reclamation works.

The Kootenay-Boundary region is the first area in British Columbia to implement a comprehensive forest management strategy in domestic watersheds. Soon after the implementation phase is complete, it will be necessary to begin reviewing on-the-ground applications of the guidebook to address weaknesses and strengthen overall effectiveness.

(d) *Spatial Application of Guidelines*

Community watersheds are identified on map 3.7 and are listed in table form by forest district within each of the seven Appendices. As noted in Chapter 2, strategy 49.1, the list of community watersheds will be reviewed annually to determine additions or deletions.

There are more than 2750 **domestic watersheds** within the Kootenay/Boundary region. At the time of writing this document, there is insufficient information to produce a map of domestic watersheds. Through application of these guidelines, domestic watersheds will be classified and mapped.

3.7.2 Operational Guidelines

(a) *Community Watersheds*

The Forest Practices Code Community Watershed Guidebook will apply within all designated community watersheds.

(b) *Domestic Watersheds*

Classification of Watersheds

Domestic watersheds will be classified into three categories as follows:

Class 1 Watersheds

These watersheds are associated with springs and very small creeks which do not have clearly defined drainage or catchment areas. Often these small water sources are located on “face units” (populated areas between major streams). Face units may encompass many small streams and springs which support domestic licensing. Face units will often be mapped as one area because of the difficulty of defining these micro drainage areas without on-the-ground investigation. There may also be streams within the mapped face unit which are not licensed for domestic use. It will be important for the forest/mineral proponent to identify these early in the process so that unnecessary assessments and notification of water users can be avoided.

Class 2 Watersheds

These are small watersheds having drainage areas which are; definable on existing topographic mapping and, less than 500 ha (5 km²).

Class 3 Watersheds

These are watersheds with a drainage area of 500 ha (5 km²) to 200,000 ha (200 km²). To aide in the assessment procedure in these larger watersheds, it may be necessary for MELP to delineate sub-drainages as part of the mapping exercise. Sub-drainages will be established using the methodology given in the Interior Watershed Assessment Procedure (IWAP) guidebook.

Mapping

Class 1, 2 and 3 domestic watersheds (and sub-drainages where applicable) will be mapped by Environment and Lands onto a 1:20000 base. This mapping will also show community watersheds. Since water licensing is not static, this mapping will be updated periodically and distributed to Ministry of Forests district offices. For information on the status of water licensing on streams contact the Water Management Program.

Assessment and Detailed Mapping for Forest Activities

When forest activities are proposed within known domestic watersheds, an assessment procedure will be completed by the proponent and submitted with the forest development plan (FDP). The objective of the assessment will be to ensure that the proposed forest activities do not pose an unacceptable risk to water quality, and the quantity and timing of flow at the point of intake.

As noted under the definition of a domestic watershed, the mapped watershed area often contains private land. The following procedures are to be applied to the crown land portion of the watershed. These procedures should not be used to assess the impacts of rural land development. However, private land holders are encouraged to follow these procedures and practices when logging private land.

The assessment procedure prescribed for larger watersheds is similar in part to the procedures described in the Interior Watershed Assessment Procedure (IWAP) Guidebook and an understanding of IWAP is essential to an understanding of this section.

The proponent may request relief from the requirement for an assessment by illustrating to the MOF district manager that the proposed activity creates an insignificant impact to the watershed (i.e. large watershed with a very small amount of proposed activity). The district manager will consult Water Management staff as appropriate.

Class 1 Watersheds

Areas defined as class 1 watersheds on the mapping will undergo a detailed procedure as systems described in the box below. The main objective is to maintain the integrity of recharge areas and channel.

1. Obtain the highest quality topographic map of the area that is available (this will usually be the 1:20,000 TRIM map), the largest scale air photograph pairs available, MELP map referred to in section 3.4, the MELP map of water intake locations and the MELP water license listing of the area in question.
2. Transfer the locations of the water intakes on the MELP water intake location map to a large scale topographic map (e.g. 1:20,000 TRIM map).
3. Confirm intake locations (by field work if necessary) and transfer to the topographic maps. If the stream courses are mapped inaccurately, indicate the correct locations on the topographic maps. In order to find the intakes, it may be necessary to interview the water licensees. It may be necessary to go on private land and appropriate permission should be obtained for doing so. The air photographs will be useful for field checking.
4. Map the streams above the water intakes on the topographic map by walking upstream of the intake. It may be possible to quickly affirm that the TRIM map is correct. If it is not correct, use compass and chain methods or GPS units to enable transfer of actual stream locations onto the topographic maps. It should be noted that many first order streams disappear and reappear as one moves upslope and a thorough search should be made of all field evidence of seepage zones and streamflow above the first disappearance of the streams. Indicate on the map where an actual channel exists (solid line) and where you infer flow (dashed line). Indicate evidence of flowing water and seepage separately. Mapping should be done during periods of high flow (e.g. shortly after snowmelt) when flow pathways are most evident.
5. Use the topographic map to outline the inferred drainage area contributing to each water source.
6. Use this map to plan the location of roads and logging activity. Roads have the potential to divert water away from areas used for water supply. Harvesting activities must be planned such that the flow remains in the natural channels. Small changes in drainage patterns can affect downslope water supplies.
7. Avoid locating roads within 50m of the water intake. If the road is constructed through a seepage area, it should be constructed in such a manner that slope seepage is maintained in its present location. Specialized road construction techniques such as a permeable road prism or use of geotextile fabrics may be necessary in selected seepage zones to maintain the natural subsurface flow patterns.
8. When the road is surveyed in the field, crossings of each water source should be clearly ribboned with the name of the source and "domestic water supply" written on the ribbon. The locations of the crossings are to be pointed out to those doing the road construction.
9. When the road is constructed, signs are to be placed at each water supply stream crossing which name the source and "domestic water supply".
10. Road construction should be carried out in a manner which minimizes impacts to water quality.
11. The road should be designed in such a manner that road surface and ditch drainage does not directly enter a water supply stream. High quality surfacing material should be used immediately adjacent to stream crossings.
12. All personnel doing activity in the area should be informed that they are operating in a water supply area and that all their activities including personal hygiene should respect the maintenance of the downstream water supply.
13. In general roads in this class of watersheds should remain open only as long as they are required. When road use is complete they should be rehabilitated with special attention given to maintaining natural drainage patterns.

Class 2 Watersheds

Areas defined as class 2 watersheds on the mapping will undergo a detailed procedure as described in the box below. The objective is to confirm channel and intake locations and to plan upstream activities such that new sediment sources are not created.

The procedure for class 2 watersheds requires less field work because these watersheds are topographically defined. A watershed report card (see Class 3 Watersheds) is required. Since results from the report card become less dependable with smaller watersheds, the report card should not be used by itself to define hazards in watersheds under 5 km²(500 ha).

1. Obtain the highest quality topographic map of the area that is available (this will usually be the 1:20,000 TRIM map), the largest scale air photograph pairs available, the MELP watershed classification map, the MELP map of water intake locations and the MELP water license information for the streams in question.
2. Transfer the locations of the water intakes on the MELP water rights map to a large scale topographic map (e.g. 1:20,000 TRIM map).
3. Walk stream courses above water intakes. It may be possible to quickly affirm that the TRIM map is correct and further ground verification is not necessary. When mapping does not appear to be correct, use compass and chain methods or GPS units to enable transfer of stream locations onto topographic maps.
4. Use the topographic map to estimate the drainage area.
5. Overlay available terrain information to plan the location of roads and logging activity.
6. Avoid locating roads within 50 m of any water intake or on unstable terrain.
7. When the road is surveyed in the field, crossings of each water source should be clearly ribboned with the name the source and "domestic water supply" written on the ribbon. The locations of the crossings are to be pointed out to those doing the road construction.
8. When the road is constructed, signs are to be placed at each water supply stream crossing which name the source and state "domestic water supply".
9. Road construction should be carried out in a manner which minimizes impacts to water quality.
10. The road should be designed in such a manner that road surface and ditch drainage does not directly enter a water supply stream. High quality surfacing material should be used immediately adjacent to stream crossings.
11. All personnel doing activity in the area should be informed that they are operating in a water supply area and that all their activities including personal hygiene should respect the maintenance of the downstream water supply.
12. In general roads in this class of watersheds should remain open only as long as they are required. When road use is complete they should be rehabilitated with special attention given to maintaining natural drainage patterns.

Class 3 Watersheds

Areas defined as class 3 on the mapping will undergo an assessment utilizing a domestic watershed report card. This is a reconnaissance level analysis intended to identify several broad categories of risk from past or planned forest harvesting.

When high hazard levels are indicated, it is expected that these will be addressed in the forest development plan.

The domestic watershed report card is comprised of several key indicators which were developed for the Interior Watershed Assessment Procedure (IWAP). Larger class 3 watersheds may have sub-drainages delineated on the mapping. The report card indicators are to be generated for each sub-drainage.

IWAP is a very new procedure and will not be fully calibrated until many applications can be ground-truthed and analyzed. For example, current applications are experiencing numerous problems with “false highs”. This occurs when high hazard scores are registered on the report card but are not confirmed by field investigation. Studies are currently underway to calibrate the reconnaissance level hazard ratings with actual on-the-ground hazards. The hazard table below will change to reflect any future calibration of ratings.

Forest activity proponents are required to submit a domestic watershed report card. This report card is based on the watershed report card on page 18 of the IWAP guidebook but is limited to:

- a) peak flow index (including the equivalent clearcut area [ECA] calculation)
- b) road density for entire sub-basin (km/km²)
- c) no. of stream crossings (no./km²)
- d) no. of landslides (no./km²)
- e) roads on unstable slopes (km/km²)

These 5 indicators will be calculated by the methodology described in the IWAP guidebook and should be recorded in the following format:

Form 1. Watershed report card

Impact Indicators	Sub-basin name							
a) peak flow index (also record ECA % in this space)								
b) road density for entire sub-basin (km/km ²)								
c) # of stream crossings (no./km ²)								
d) # landslides visible on 1:20000 photos(no./km ²)								
e) roads on unstable slopes (km/km ²)*								

* Class IV and V terrain where terrain mapping is available or otherwise on slopes greater than 60%.

Hazard ratings will be determined by the following Hazard Index table:

Note: Hazard index ratings for IWAP's are presently under provincial review.

Impact Indicators	Hazard rating		
	low	medium	high
a) peak flow index	<0.3	0.3-0.42	>0.42
b) road density for entire sub-basin (km/km ²)	<1.5	1.5-2.1	>2.1
c) no. of stream crossings (no./km ²)	<0.4	0.4-0.6	>0.6
d) no. of landslides (no./km ²)	<0.1	0.1-0.18	>0.18
e) roads on unstable slopes (km/km ²)	<0.15	0.15-0.25	>0.25

NOTE: Hazard ratings which are derived from this table may not reflect true conditions in the watershed. Therefore it is important that hazard scores be used only as a course filter to help identify potential problem areas and/or to aide in the prioritization of watersheds for application of a full IWAP. When scores are tending to the high end of the scale, the FDP should state how the possible hazard will be addressed.

The following is an illustration of how the hazard rating might be used:

- If indicator “a)” is high - discuss further assessment (i.e. channel assessment) needs with agency specialists and or consider alternate harvest schedules or areas;
- If indicators “b)” to “e)” are high - confirm indicator with field review, discuss assessments with agency specialists, consider reducing new road development and/or a road reclamation strategy.

Assessment and Detailed Mapping for Mineral Exploration Activities

Mineral exploration and related activities create more localized impacts than do forest activities, therefore, the same general assessment/mapping procedure can be used in all three classes of domestic watershed.

The proponent may request relief from the requirement for an assessment by illustrating to the MEI District Inspector that the proposed activity creates an insignificant impact to the watershed (i.e. large watershed with a very small amount of proposed activity). The District Inspector will consult Water Management staff as appropriate.

When activities which require a Mines Act Permit (mechanized soil disturbance) are proposed within a domestic watershed, the District Inspector may require all or some of the following based on; proposed amount of disturbance, sensitivity of the area and proximity of water intakes:

- 1) Obtain a 1:20,000 TRIM map (or better quality map if available) of the area, the largest scale air photo pairs available, the MELP map of water intake locations and the MELP water licensing listing for the area in question. (Contact the Ministry of Employment and Investment for copies of relevant maps or information on how they may be obtained.)
- 2) Transfer the locations of the water intakes on the MELP water rights map to a large scale topographic map (i.e. the 1:20,000 TRIM map). Provide a description of the intakes with accompanying photographs.
- 3) Map the courses of the streams above the water intakes on the topographic map by walking upstream from the intake to the area of proposed activity. It may be possible to quickly affirm that the TRIM map is correct and further ground verification is not necessary. If it is not correct, use compass and chain methods or a GPS to enable transfer of true stream locations onto the topographic map. Generally, inaccuracies in TRIM stream locations, occur more on small streams that are poorly defined by contours.
- 4) A reconnaissance level terrain stability assessment and detailed surface soil erosion assessment and mapping may be required by the District Inspector in particularly sensitive areas.
- 5) Use the map with an overlay of the terrain map (if a terrain stability assessment has been required) to plan the trail building and other mining or exploration activities. All proposed works are to be noted on the map.

Riparian Management

For forest activities, riparian management in domestic watersheds will be determined by the Riparian Management Guidebook with one important exception. Streams licensed for domestic use which are classified as S5 or S6 under the guidebook, will be managed as S4 streams for a distance of 500m above the most upstream domestic intake. S4 management (see page 50 of the guidebook) is designed to maintain water quality, stream channel processes and stream temperatures.

This riparian management will be applied to all water sources which support domestic licensing regardless of whether they are defined as streams under the FPC.

For mineral exploration activities, riparian management provisions will follow the Mineral Exploration Code. Except for stream crossings and pump locations, works shall not occur within 5 metres of the wetted perimeter of a stream. In cases where the 5 metre buffer does not afford adequate protection for water quality, the District Inspector may employ additional best management practices adjacent to the reserve. The extent of the management area and the type of practices employed will be determined by; the proposed level of disturbance, proximity to the stream and the sensitivity of the site.

Forest Practices in Domestic Watersheds

Terrain Hazards

- A person should not propose harvesting of an area in a domestic watershed if the area is subject to a high likelihood of landslides following timber harvesting.
- Reconnaissance level terrain mapping is normally required in domestic watersheds.

Roads

- A road in a domestic watershed should not be located within a 50 m radius upslope of a water intake.
- Roads should be constructed so as to minimize disruption of surface and subsurface flow pathways particularly in spring recharge areas.
- A person who constructs, modifies or deactivates a road in a domestic watershed should; (a) notify water licensees or their representatives of the start date of road construction, modification or deactivation at least 48 hours before the start of road construction, modification or deactivation if it is anticipated that sediment could reach a water intake; (b) ensure that rock containing significant amounts of sulphide minerals, and which may have potential for generation of acid, is not used for road construction or modification.

Harvest Levels

Harvest levels are determined by calculation of the equivalent clearcut area (ECA) as is necessary for the watershed report card. This is done for the watershed as a whole and for major sub-drainages within the watershed as shown on the MELP watershed mapping. The concentration of harvesting on smaller areas should also be considered.

ECA's in sub-basins

- The maximum ECA in any basin larger than 250 ha, that has not been individually considered in the report card, should not exceed 30 % of the area. If it has been considered individually, the report card will apply.

ECA's above sensitive sites

- When cutblocks are proposed on areas which drain onto class IV or V terrain (or slopes over 60% if terrain mapping not available), the ECA should be limited to 20 % of the area draining onto the sensitive site.

Range

Range management provisions within the Forest Practices Code recognize domestic water use. Range Use Plans (RUP's) are mandatory and must indicate known domestic intakes and actions taken to accommodate this resource use. The FPC requires that the RUP indicate levels of use, strategies for wetlands and riparian areas and other provisions.

Domestic water users can review RUP's and provide comment. The MOF district manager approves RUP's and can require amendments if special circumstances warrant. In addition, the district manager can require security for the performance of obligations under a RUP.

If problems or special circumstances arise with respect to range use in a domestic watershed, the initial preferred approach is for the water user to deal with the MOF district manager. In cases where it is suspected that a water supply has been contaminated, the district manager should promptly notify and consult with staff in

MELP, Ministry of Health and Ministry of Agriculture, Fisheries and Food in order to locate the appropriate expertise to confirm and respond to the problem. Occasionally, an inter-agency team may be required to resolve contentious situations.

Timber Harvesting

- A person carrying out a timber harvesting operation on applicable land within a domestic watershed should not, except to provide access to, or to maintain, a water supply intake, cut or damage a tree that is closer than 50m upslope of a water supply intake and must protect known water supply intakes and infrastructures.

Silviculture

- The use of livestock to carry out site preparation or brush control within a riparian management area, must be guided by a suitable management or animal control plan which addresses maintenance of water quality.
- The use of pesticides will be managed similarly to the Pesticide Management section of the Community Watershed Guidebook (see page 101). Under this strategy, pesticide applicants would be required to develop an Integrated Pest Management program prior to receiving a permit. IPM programs consider non-toxic alternative treatments, long term prevention of pest problems and would provide opportunities for public input in contentious areas.
- A 10m fertilizer-free zone should be maintained around any flowing stream that is observable from the air. See the Fertilizer Management section of the Community Watershed Guidebook for a description of how to ensure this zone is maintained. Fertilizer application close to streams is sometimes beneficial to water quality (e.g. hydro-seeding of road banks at stream crossings).
- Fertilizer should not be applied within 50m upslope of a water intake.
- Fertilizer should be applied during cool and moist conditions (not during the summer).

Recreation

- The construction of recreation facilities within riparian management areas should be avoided whenever possible.
- In general, activities such as motorized recreation and camping should not be encouraged in smaller domestic watersheds (< 10 km²).

Mineral Exploration Practices in Domestic Watersheds

- Avoid locating roads, drill sites, trenches or other works within 50 metres radius upslope of a water intake or on unstable ground, unless authorized by the District Inspector.
- Exploration drilling and the establishment of pump intakes in domestic water sheds should not be located within 50 metres radius upslope of a water intake.
- Roads, drill sites, trenches or other works should not interfere with any known subsurface flow paths of a drainage area that contributes to a spring.
- When a road location is surveyed in the field, the location of the crossings of each water source stream should be clearly ribboned with the name of the source and “domestic

water supply” written on the flagging. The locations of the crossings are to be pointed out to those doing the construction.

- When the roads are constructed, signs are to be placed at each water supply stream crossing which name the stream and indicate “domestic water supply”.
- Trail, drill pad, trenching and other works should be carried out in such a manner that adverse impacts on water quality are minimized. For instance, sumps shall be utilized to contain drill cuttings and mud. Drilling muds and fluid additives shall be of a non-toxic and non-hazardous nature.
- Works should be designed and constructed in such a manner that surface drainage is prevented from directly entering a water supply stream. Where possible, works should be designed and constructed such that water drains away from the stream. Specialized construction practices, operating practices and materials (such as filter fabrics, high quality surfacing materials etc.) may be required to be utilized. For instance impervious drill sumps with drilling fluid recirculation may be required in select instances.
- All personnel working on the project must be informed that they are operating in a water supply area and that all activities including personal hygiene must respect the maintenance of the downstream water supply.
- In general works shall be reclaimed as soon as practicable, when they are no longer required.
- A person who constructs, modifies or reclaims a road or exploration trail in a domestic watershed should; (a) notify water licensees or their representatives of the start date of road construction, modification or reclamation at least 48 hours before the start of road construction, modification or reclamation if it is anticipated that sediment could reach a water intake; (b) ensure that rock containing significant amounts of sulphide minerals, and which may have potential for generation of acid, is not used for road construction or modification.
- The District Inspector may require drill holes that make water to be sealed with cement.
- Trenches should be located or oriented to minimize inflows of surface water.
- If trenches intercept the water table or groundwater flows, work should not continue until it can be determined that domestic water supplies will not likely be adversely affected and the District Inspector has approved a mitigative strategy.

3.7.3 Planning Framework and Public Input

For forest activities, the following chart summarizes the first stage of planning in domestic watersheds.

	Class 1	Class 2	Class 3
Watershed type	Springs and very small streams	Small streams with defined drainage area <500 ha.	Larger streams with defined drainage area >500 ha.
Objective	Maintain water quality, quantity and timing of flow.	Maintain water quality, quantity and timing of flow.	Maintain water quality, quantity and timing of flow.
Watershed characteristics	Very small streams and spring recharge areas often with indistinct catchment boundaries and channels. Drainage patterns and sensitive areas can not usually be determined from existing mapping.	Erosion prevention is the principle concern. Sediment is likely to reach intakes. Streams may be of sufficient size to cause debris flows or bedload movement. Peak flow becomes a concern in larger streams in this class.	Slope failure, sediment delivery and channel stability are the key factors in maintaining water quality. Peak flow is a concern.
Strategy	Detailed mapping required. Forest development plan should address hazards for specific local conditions.	The domestic watershed report card may prove useful but must be accompanied by ground-truthing local conditions. Forest development plan should address hazards.	Reconnaissance level assessment required using domestic watershed report card. In larger watersheds assessment by sub-drainage becomes important. Forest development plan should address hazards.
Target conditions	Avoid problem areas. Minimal disturbance of sub-surface drainage patterns and surface channels. Recommend ECA < 30%.	Avoid problem areas which could result in sediment movement. Minimize roads and stream crossings. Recommend ECA < 30%.	Distribute cut by elevation and sub-drainage to reduce peak flows. Mitigative action plans are required for problem areas. Recommend ECA < 35%
Data requirements	Recommend level B or C terrain and soils mapping. Detailed mapping of drainage patterns, drainage areas and water intake and stream locations.	Recommend level B or C terrain and soils mapping. Detailed mapping of drainage patterns and drainage areas may in required in portions of the watershed.	Recommend level D terrain and soils mapping to ensure the effective application of the domestic watershed report card.

In the second stage of planning, the forest licensee or SBFEP must incorporate the assessment information and recommendations into the forest development plan. Riparian management and other forest management practices particular to domestic watersheds must be incorporated into the various operational plans.

When the forest development plan is advertised for public review, the forest company (or the Ministry of Forests for the small business program), will make a reasonable attempt to notify the affected water licensees that:

- a) the BLANK forest development plan is being offered for review (date, time, place);
- b) the forest development plan proposes harvesting or roads in the BLANK domestic watershed within the next five years.

This process will ensure that water licensees are notified about the proposed activity and are aware of their opportunity to comment on the forest development plan. Public input will be facilitated by the inclusion of the watershed assessment which will give water users an indication of existing and proposed impacts to the watershed.

The responsibility for approving forest development plans which cover areas in domestic watersheds, rests solely with the MOF district manager. This is unlike the situation in community watersheds where, under the Forest Practices Code, forest development plans must be approved by both the district manager and a designated environment official. The district manager must be satisfied that the forest development plan complies with the FPC, adequately manages and conserves the forest resources and, lastly, is consistent with any higher level plan.

This guideline should be considered baseline management which can be applied to all domestic watersheds regardless of the number of users or other management issues. Obviously, there are some domestic watersheds where the consequences of a damaged water supply are very high and others where the consequences are relatively low. In some high consequence areas, it is expected that more planning, assessment, monitoring and public involvement will be necessary to address all issues.

For a discussion of additional avenues for planning and public involvement, see section 9.4 of the KBLUP Implementation Strategy.

For mineral exploration activities, the need for public consultation will be considered on a project-by-project, site-specific basis when activity is proposed in domestic watersheds.

3.7.4 Contingency Planning for Domestic Watersheds

The contingency planning section was largely brought over from the Community Watershed Guidebook. Work will continue on this section with the goal of improving clarity and providing better definition of agency roles and responsibilities. Any changes to this section will be made in compliance with the plan amendment procedures outlined in Chapter 6.

a) Forest Activities

This section describes the purpose, content, and the roles and responsibilities associated with the development and execution of a contingency plan for a domestic watershed.

Elements of a contingency plan

A contingency plan will help provide for the supply of emergency water and for the rehabilitation of the water system should damage occur. The contingency plan is based on the principle of *immediate response* to water supply problems. Aspects of a contingency plan for a domestic watershed are as follows:

- A contingency plan should be adopted for domestic watersheds with input from water users, forest companies, MOF and MELP.
- The contingency plan will normally apply only to forest activities on Crown lands within the domestic watershed. Water users can expand the focus to broader issues (e.g. private land or other resource uses) by establishing agreements with other parties.
- The contingency plan should identify:
 - a list of participants which will usually be comprised of water users, forest company, MOF, MELP and sometimes MOH;
 - names, addresses and phone numbers of the initial contacts to ensure proper action (Figure 3.1 “Emergency response flow chart”);
 - procedures for the provision of alternative water supplies for the water users serviced by the domestic watershed. These can include, for example, the use of water tankers, wells, or pipelines from adjacent drainages;
 - in some cases, a description of procedures to mitigate some potential water supply impacts (e.g., the construction of settling ponds, the laying of bypass pipe, and construction of a filter system to clarify water).

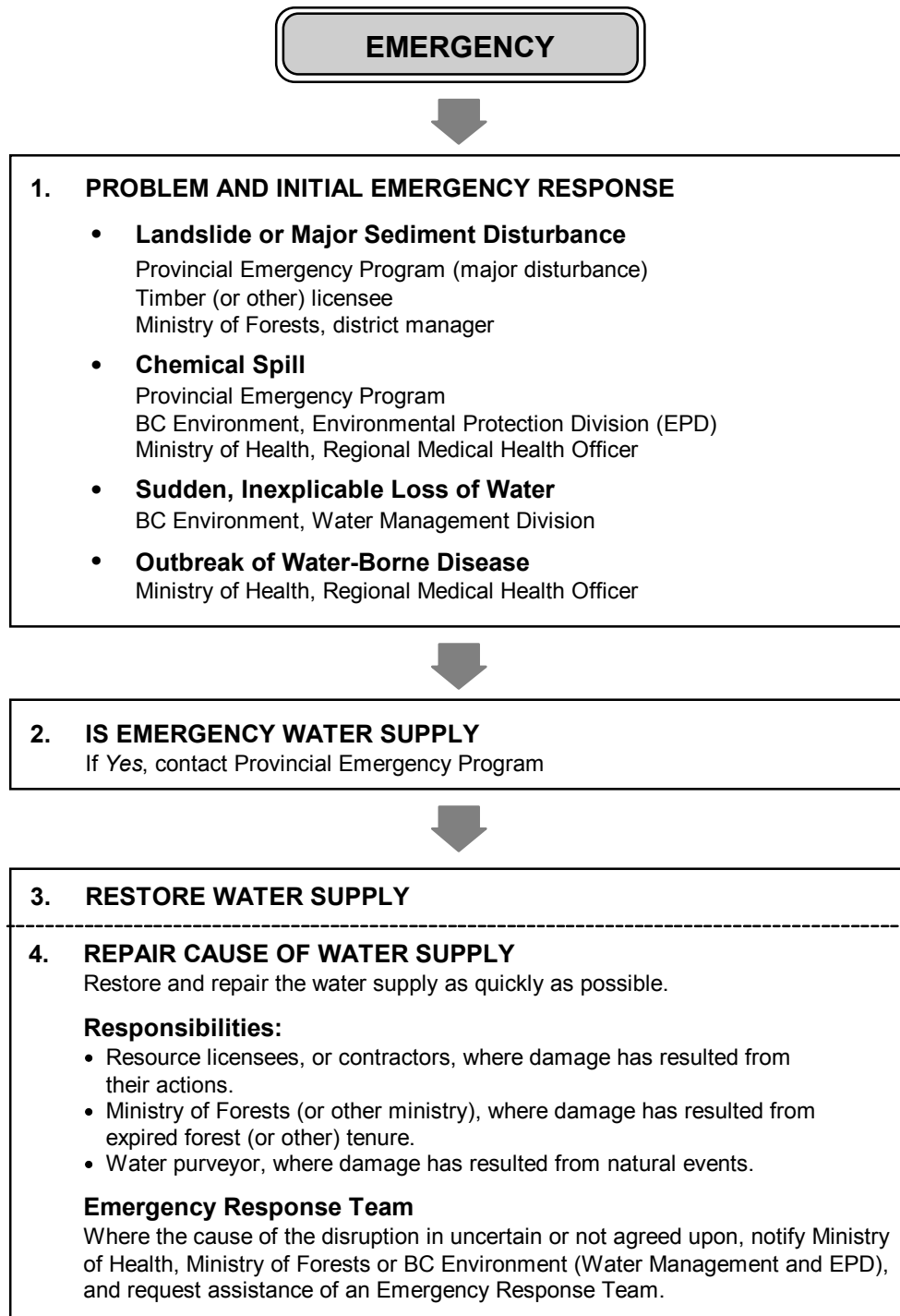


Figure 3.7.1 Emergency response flow chart

General roles and responsibilities

Whenever there is an event which adversely impacts the quality or quantity of water within a watershed by disrupting or damaging a water supply or by posing a health risk, every effort shall be made to re-establish the supply, or mitigate harmful effects, as quickly as possible. In some situations this may require that the participants undertake the necessary remedial action using any available resources before responsibility is determined.

The roles and responsibilities of the participants may vary between plans. The remainder of this section summarizes typical roles and responsibilities.

Water licensees

The roles and responsibilities of the water licensees are to:

- Be responsible for the installation and maintenance of systems consistent with their licensing, and capable of handling the natural ranges of water quantity and quality from the source, including sediment loads.
- Participate in field inspections and reviews of road construction, logging operations and other resource developments and advise the government ministries and resource licensees of their concerns.
- In cooperation with the appropriate agencies and other resource licensees, restore a disrupted water supply as quickly as possible to minimize the impacts on the water users.
- Assist other resource users in the rehabilitation of the water resource and water systems where there is an impairment of water quality or quantity due to resource development.

Ministry of Health

The roles and responsibilities of the Ministry of Health are to:

- Upon request, assist with the emergency investigation and response in the event of impairment or disruption of water quality or quantity.

Ministry of Environment, Lands and Parks (Water Management Division)

In most contingency plans, the Water Management Division will be the lead participant from the Ministry of Environment, Lands and Parks. In addition, the Environmental Protection Program, Fish and Wildlife Branch and the Conservation Officer Service may be requested to participate depending on the circumstances.

The roles and responsibilities of the Water Management Division are to:

- Upon request, assist with the emergency investigation and response in the event of impairment or disruption of water quality or quantity.
- In cooperation with appropriate provincial ministries, adjudicate disagreements over responsibilities and determine what remedial actions are required and by whom, as legislated under the *Water Act* and other applicable legislation.

Ministry of Forests

The roles and responsibilities of the Ministry of Forests are to:

- Direct Ministry of Forests tenure holders to rectify situations arising from activities authorized by the ministry which have the potential to impair or degrade water quality or quantity.
- Through the district manager, initiate repair of damage to a water supply if a Ministry of Forest tenure has expired.
- Upon request, assist with the emergency investigation and response in the event of impairment or disruption of water quality or quantity.
- In cooperation with appropriate provincial ministries, adjudicate disagreements over responsibilities and determine what remedial actions are required and by whom, as legislated under the *Ministry of Forests Act*, *Forest Act*, *Range Act*, and other applicable legislation.
- Assume the role and responsibilities of a forest licensee, as set out in this section under “Resource licensees and tenure holders”, when the Ministry of Forests carries out operations under the Small Business Forest Enterprise Program.

Ministry of the Solicitor General (Provincial Emergency Program)

The Provincial Emergency Program (PEP) helps local governments and provincial ministries prepare for, and respond to, disasters which threaten life and property.

PEP may:

- Assist in providing emergency potable water in the event of an emergency which causes damage to or loss of a water supply which is beyond a water purveyor's or a licensee's ability to resolve.
- Act as a facilitator in resolving an human or environmental emergency.
- Provide emergency financial assistance to others for the purposes of repairing a damaged water supply through the Disaster Financial Assistance Program.

Forest licensees and tenure holders and their contractors

The roles and responsibilities of forest licensees and their contractors are to:

- Advise affected water licensees of planned interruptions or potential sediment increases as a result of their activities.
- Immediately advise the water licensees, Water Management, and the Ministry of Forests of any situation for which they are responsible, or which they observe, which is potentially harmful to water quality or quantity.
- Immediately take remedial action to correct any situation arising from their activities which may potentially impact water quality and quantity, or otherwise damage a water supply system.
- Cooperate with the water purveyor or licensees, and the appropriate agencies, to restore a disrupted water supply as quickly as possible, thereby minimizing the impacts on the water users.

Determination of responsibility

The objective of the contingency plan is to have all water supply problems resolved as quickly as possible and, where necessary, to determine responsibility following rehabilitative work. Where damage to a water supply occurs:

- Refer to the contingency plan flow chart to identify the sequence of events in solving an unplanned impairment to water supplies.
- If a contractor or forest licensee is on site, the contractor or licensee and a representative of the water users should endeavor to determine the nature of the problem and the responsibility for the impairment, and agree upon a procedure to correct it. This should be done within 12 hours of impairment being reported.
- The regional water management office and the Ministry of Forests district office shall be notified immediately of any impairment which cannot be corrected within 12 hours.
- Where the forest licensee and the representative of the water users cannot agree on the type and extent of, and responsibility for, remedial action, they shall immediately notify either the Water Management Division or Ministry of Forests to request the involvement of an Emergency Response Team.
- An Emergency Response Team will be comprised of staff from the Water Management Division of the Ministry of Environment, Lands and Parks, the Ministry of Forests, a representative of the water users and, where appropriate, the resource licensee/contractor. Involvement of the Provincial Emergency Program may also be requested depending on circumstances. Outside experts may be called upon at the request of the team.
- The Emergency Response Team will be responsible for determining the source and cause of damage to the water supply, and preparing recommendations regarding the type of remedial action required and responsibility for its completion. This should be done within 4 days of identification of the problem.
- The Emergency Response Team will submit a report on its findings to the regional water manager, Ministry of Environment, Lands and Parks, and the district manager, Ministry of Forests, with recommendation regarding the assignment of responsibilities. The final decision regarding responsibility and the recovery of costs will rest with the two managers.

The contingency plan is intended to expedite local solutions to water-related problems, but does not preclude a private person or corporation from pursuing individual legal remedies for damage to water quality or quantity.

Specific responsibilities

Short-term planned disruptions

Occasionally, the water users and the licensee/contractor agree to allow a short-term planned disruption of a water supply. The licensee/contractor will:

- give a minimum of one weeks' notice to the water users to allow planning for the water supply disruption.

- be responsible for costs incurred by water licensees to change the water system. These can include costs to:
 - access and utilize a temporary water supply;
 - clean the infiltration gallery or intake dam where appropriate;
 - deliver water to households for minimum domestic requirements.
 If a disturbance to a water supply system lasts longer than 48 hours, it is considered a long-term problem (see section 3.5.3 “Long-term disruptions”).

Short-term accidental disruptions

If a short-term accidental disruption occurs, the licensee/contractor will:

- Provide assistance to the water licensees to alter their intake system to prevent further disruptions.
- Be responsible for costs incurred to:
 - access and utilize a temporary water supply;
 - clean the infiltration gallery or intake dam where appropriate;
 - deliver water to households for minimum domestic requirements.

Long-term disruptions

If an accidental or planned disruption or pollution problem lasting longer than 48 hours occurs:

- The contractor will continue to be responsible for extra costs incurred by the water licensee until such time as the problem has been rectified.

Ensuring compliance

To ensure compliance with contract conditions and specific responsibilities, under section 3.5 “Specific responsibilities”, major forest licensees or permittees are required to post with the district manager, Ministry of Forests, bonds, security deposits or safe keeping agreements for working within the domestic watershed area in the amount of \$25,000, or provide documentation of an adequate liability insurance policy.

During operations, and until the district manager is satisfied that all conditions outlined in the relevant tenure documents have been met, the forest licensee should accept the responsibilities associated with operating within a domestic watershed.

Also, it is recognized that, despite all precautions, natural or human-induced damage may occur. If the relevant tenure has expired, the district manager may initiate reparation work. The Ministry of Forests will pursue sources of budgetary funding to conduct repairs required after the term of the forest tenure has expired and after the “free-growing” period has ended.

b) Mineral Exploration Activities

There are no provisions for routine contingency plans due to the relatively low level of impact to land and water resources of mineral exploration. However, the need for a contingency plan will be determined on a project-by-project, site-specific basis.

The District Inspector will set the requisite reclamation security, based on appraisal of amount required to rehabilitate site to standards dictated by the Mines Act and Mineral Exploration Code.

3.8 Front Country Visual Management Guidelines

3.8.1 Introduction

(a) Intent

Design of timber harvesting, forest management and mineral exploration should reflect the importance of front country landscapes to communities, recreation and tourism.

(b) General Approach

This guideline outlines three classes of landscape management for scenic areas. The classes reflect level of sensitivity and significance of landscapes to communities and to tourism.

(c) Spatial Application of Guidelines

These guidelines will apply to the three classes of visual areas identified on map 3.8.

Class 1 includes areas visible from the following highways, towns, and lakes:

- The Trans-Canada corridor (Highway 1) including Revelstoke and Golden
- Highway 93, north of Canal Flats, including Fairmont, Invermere, Radium, Windermere Lake and Columbia Lake
- Highway 3A Castlegar to Creston, Highway 31 Balfour to Meadow Creek, Highway 31A Kaslo to New Denver, including Nelson, Balfour, Riondel, Kootenay Lake and the West Arm of Kootenay Lake
- Highway 3 Corridor, including Greenwood, Grand Forks, Castlegar, Salmo, Creston, Cranbrook and Fort Steele, Christina Lake and Moyie Lake
- Highway 95A Ta Ta Creek to Cranbrook, Highway 93/95 Ta Ta Creek to Fort Steele, including Kimberley
- Highway 3B Nancy Green Lake Trail, including Rossland
- Lower Arrow Lake from Syringa Creek to Castlegar
- Highway 6 Nakusp to South Slokan, including New Denver, Silverton, the Slokan Valley, Summit Lake and Slokan Lake

Class 2 includes areas visible from the following towns, highways and lakes:

- Highway 95, Golden to Radium
- Highway 93/95, Canal Flats to Ta Ta Creek
- Highway 93 south of Elko and Lake Koocanusa
- Highway 6, Nelson to Nelway
- Highway 3B Meadows to Trail, Highway 22 Rossland to Patterson, Highway 22A Montrose to Waneta
- Trout Lake
- Highway 23 Revelstoke to Nakusp, Highway 6 Nakusp to Monashee Pass, Upper Arrow Lake, Lower Arrow Lake north of Octopus and Worthington Creeks, and Lower Arrow Lake between Renata and Syringa Creek Park.

Class 3 includes areas visible from the following towns, highways and lakes:

- Highway 43, Elkford to Sparwood
- Highway 31, Galena Bay to Meadow Creek
- Lower Arrow Lake, Fauquier to Syringa Creek
- Highway 33

3.8.2 Operational Guidelines

For the purposes of the following table, *Foreground* refers to landscape up to one kilometer away, *Midground* refers to landscape between one and five kilometers away, and *Background* refers to landscapes between five and twelve kilometers away.

	Class 1	Class 2	Class 3
Landscape Design Intent	<p>In most visible foreground areas and in important or prominent midground areas, disturbance may be discernible but should not be evident in the landscape.</p> <p>In less important or prominent foreground areas, most midground areas, and important or prominent background areas, visible disturbance should remain subordinate in the landscape.</p> <p>In most background areas and less important midground areas, landscape alterations may be visually apparent, but should be designed to blend into the landscape in form and colour.</p>	<p>In most foreground areas, disturbance may be visible, but should remain subordinate in the landscape.</p> <p>In less important or prominent foreground areas, and in midground areas, disturbance may be visible, but should remain subordinate in the landscape.</p> <p>In background areas, landscape alterations may be visually apparent, but should be designed to blend into the landscape in form and colour.</p>	<p>In most foreground areas, disturbance should be subordinate in the landscape.</p> <p>In less important or prominent foreground areas, and in midground and background areas, landscape alterations may be visually apparent, but should be designed to blend into the landscape in form and colour.</p>

3.9 Backcountry Recreation Management Guidelines

3.9.1 Introduction

(a) Guideline Intent

To manage Crown land to provide a range of recreation features, facilities and opportunities.

(b) General Management Approach

The above intent will be achieved primarily by maintaining a recreation inventory and, through lower level strategic planning which is consistent with the KBLUP and Implementation Strategy, to establish recreation objectives at the landscape unit level.

The inventory, establishment of recreation objectives and these guidelines utilize the Recreation Opportunity System (ROS) methodology. The ROS system is used to establish targets for recreation. This classification system states the type of recreation experience a recreation user (commercial or non commercial) would have using the terms; Primitive (P), Semi Primitive Non Motorized (SPNM), Semi Primitive Motorized (SPM) and Roaded Resource Land (RRL). The criteria used for the classification are; remoteness, size, evidence of humans, social setting, setting characterization and experience characterization. The following table explains the criteria and classification of the ROS system. Within the context of the KBLUP Implementation Strategy, P is reserved for Protected Areas, and not applied to land outside of a Protected Area.

The management intent of SPNM areas is to maintain the unroaded character of the area and to provide opportunities for dispersed non-motorized recreation. These areas are generally remote, alpine, subalpine and high elevation forest, high elevation ridges and mountain tops that not been accessed by roads. Trails provide access for recreation users and BCFS permittees (e.g., livestock permittees). Landscape alterations have been minimal. These areas provide an opportunity to experience a reasonable degree of isolation from the sights and sounds of motorized activity in a natural appearing setting. However, in the winter, these areas may be used by snowmobiles and snowcats (subject to lower level strategic planning, local agreements and not in conflict with sensitive wildlife species), which gives a seasonal separation between activities. Helicopter use may occur in any season.

The management intent of SPM areas is for dispersed motorized recreation. These areas are accessed by primitive roads or trails suitable for high clearance 4 wheel drive vehicles, ATV's (quads), motorcycles and snowmobiles. All forms of dispersed recreation associated with these kinds of vehicles occur. These lands have been impacted by human activities and may or may not be natural appearing landscapes. Opportunities to get away from other recreation users and to experience solitude are good during most seasons of the year. This classification may be applied for winter use in alpine and subalpine areas used by snowmobiles and snowcats and is also intended for areas where roads have been deactivated, gated or have access restrictions.

The management intent of RRL areas is for dispersed and facility oriented recreation. These lands are accessed by better than primitive roads and are suitable for most conventional 2 wheel drive vehicles. All forms of dispersed and organized recreation associated with vehicles occurs. These lands have been altered by man and the alterations are visible on the landscape. Depending on season and the nature of the recreation activity opportunities to experience solitude are rare. (This is the classification used for the operable forest that will be harvested using roads. Non motorized activities also occur in this area such as cross country skiing or canoeing and restrictions may occur that prohibit some conflicting recreation activities).

For the special management and integrated polygons, it was assumed that all operable ground for forest management activities would be roaded. This means that operable forest land presently in an unroaded state (SPNM/P) would be converted to a roaded or semi primitive roaded condition over time. There is also the possibility that inoperable forest land outside of parks may be roaded at some point in the future for subsurface resource development. This was the basis for stating objectives as RRL or SPM. In most cases the land classified as RRL is the operable forest below the alpine/subalpine and the land classified as SPNM is either inoperable (steep, rocky, canyons, etc.), subalpine forest or alpine in nature.

In some of the special management areas, the operable forested land is classified as SPM (semi primitive motorized). In these cases, it is assumed that the areas will be developed for forest extraction purposes, but the roads will be temporarily or permanently de-activated, evidence of road construction and man's activity will still be evident and there may (or may not be) vehicle access by way of snow machines, ATV's, mountain bicycles or 4 wheel drive vehicles.

(c) Spatial Application of Guidelines

The guidelines are applicable to recreation facilities and features throughout the region. As decisions must be made at the site specific level, and the recreation features facilities are wide spread and difficult to map at the regional scale, these guidelines will apply, in general, to the following types of areas:

- managed trails for non motorized, cross country and motorized uses
- forest roads
- trails recognized under the Heritage Conservation Act
- backcountry river corridors
- BC Forest Service campsites, cabins and historic sites
- backcountry lodges, commercial cabins and camps
- areas tenured under by BC Lands for commercial backcountry recreation
- unroaded lakes
- cave/karst areas

3.9.2 Operational Guidelines

Table 1.2 Management Guidelines for Backcountry Recreation

	Definition	General design intent	Visual design	Access management
Hiking trails, Multi-use trails	Trails managed by BCFS with objectives for motorized or non-motorized activities	Resource exploration and development activities should be designed to minimize disruption to trail corridors. Where substantial disruption is unavoidable, licensees should be directed to re-establish trails. Ideally, new and relocated trails should be designed to avoid future logging activity and mineral exploration		Road crossings of trails should be kept to a minimum.
Cross-country ski trails	Trails managed by BCFS with objectives for cross-country skiing. May include trails managed for other recreational uses in summer.	Where resource exploration or development is proposed on, or adjacent to an area suitable for cross-country skiing, roads and skid trails should be designed for subsequent use as ski trails. For example, design road right-of-ways to be as narrow as possible (<8 m) and have variable grades and suitable alignment to provide cross country ski trails.		
Heritage Trails	Trails designated under the <i>Heritage Conservation Act</i> [Dewdney, Howse, Athabasca trails]	Resource exploration and development should avoid trail corridors where possible. Harvesting is allowed within the right-of-way as specified in the Heritage Trail Management Plan.	Any logging within 200m of the trail should be designed such that modification may be discernibly but not clearly evident from the trail. Any logging visible from the trail, but more than 200m distant should show evidence of good visual design.	Considerable effort should be taken to minimize road crossings. Where crossings are necessary, trail locations should be permanently identified.
Backcountry River Corridors	Named Rivers in RMZ objectives.	Backcountry river corridors should be managed for limited access and non-motorized recreation. River corridors should be managed to achieve an ROS setting of semi-primitive non-motorized.	Any logging within 200m of the river should be designed such that modification may be discernibly but not clearly evident from the trail. Any logging visible from the river, but more than 200m distant should show evidence of good visual design.	Where practical, no new, permanent roads should be constructed within 500m of backcountry river corridors. Where practical, existing roads within 500m of backcountry river corridors should be decommissioned.

Campsites, cabins, historic sites	Forest Service campsites, named historic sites	Resource exploration and development should minimize potential impacts to the immediate surroundings of the site.	Any logging within 200m of the site should be designed such that modification may be discernibly but not clearly evident from the site.	
Lodges, Commercial cabins Camps	Permanent or semi-permanent camps or structures associated with commercial tourism tenures, without highway access.	Resource exploration and development should minimize potential impacts to the immediate surroundings of the site.	Any logging within 200m of the site should be designed such that modification may be discernibly but not clearly evident from the site.	Tenure-holders should be consulted to determine particular needs regarding access management.
Tenured or Licensed use areas	Areas tenured for commercial recreation under the <i>Lands Act</i>	Resource exploration and development activities will be evident in tenured use area. Where possible, this activity should be designed to compliment or minimize conflict with commercial recreation activity.	Resource exploration and development in tenured use areas should show evidence of good visual design. Tenure-holders should be consulted to determine areas requiring particular design consideration.	Tenure-holders should be consulted to determine particular needs regarding access management.
Backcountry lakes	Lakes, 2 ha or larger, with no road or highway access within 500m.	Backcountry lakes should be managed to maintain an unroaded condition (ROS Semi-Primitive Non Motorized).	Any logging within 200m of the lake should be designed such that modification may be discernibly but not clearly evident from the lake.	Where practical, no new, permanent roads should be constructed within 1 km of backcountry lakes. Where practical, existing roads within 1 km of backcountry lakes should be decommissioned.
Cave / karst features	Areas with significant cave or karst features	Resource exploration and development activity should be designed to minimize disruptions to hydrology and terrain that would adversely affect the karst feature. Slash should not be deposited in openings and sinkholes. Significant cave openings should be protected with a 30m reserve.		

3.10 Management Guidelines for Fire Maintained Ecosystem Restoration

3.10.1 Introduction

(a) *Intent of Guidelines*

To improve the productivity and health of fire-maintained forests and rangelands by restoring stand structure and species composition, through modern methods of timber harvesting, thinning, and prescribed burning. Restoration will improve forest stand vigor, reduce the risk of catastrophic wildfires, and rejuvenate bunchgrass communities.

(b) *Fire Maintained Ecosystems and Origin of Ingrowth*

The dry, low-elevation open forest and grassland stands of British Columbia's southern interior are defined by the Forest Practices Code Biodiversity Guidebook as Natural Disturbance Type 4 (NDT4), characterized by "frequent, stand-maintaining fires." These stands include the Biogeoclimatic Zones Interior Douglas-fir (IDF), Ponderosa Pine (PP), and dry variants of the Interior Cedar-Hemlock (ICH). Low-intensity surface fires, occurring on a 5 to 20 year cycle, are part of the natural function of these ecosystems, maintaining a mosaic of grassland and open forest, while at the same time promoting the development of fire-tolerant overstories of mature ponderosa pine, Douglas-fir and Western larch. Several decades of active fire suppression in the NDT4 has resulted in tree establishment in previously treeless openings (encroachment) and excessive tree recruitment in open forests (ingrowth) beyond the level these sites can support. The primary tree species responsible for both processes is Douglas-fir. The consequences of ingrowth and encroachment are poor forest health, poor timber quality and degraded rangeland values.

(c) *General Management Approach*

Restoration and management activities will be incorporated into appropriate Landscape Unit and operational plans, and will generally consist of:

1. inventories that designate areas based on a spectrum of ecosystem components each with an appropriate mix of timber and rangeland values;
2. development of harvesting and management objectives for these areas, including ranges of locally appropriate stem density, canopy closure and age-class distribution, as well as Potential and Desired Plant Communities for the rangeland understory;
3. identification and removal of any administrative obstacles to the implementation of these management objectives, and;
4. prompt implementation of Restoration work, using an adaptive management approach to fine-tune objectives and improve performance

Sample Restoration guidelines are shown on Tables 1 and 2. It is important to note that these are preliminary guidelines, intended to be modified through operational experience, the development of local inventories, and a better understanding of fire-maintained ecosystems.

Table 1. Kootenay/Boundary Fire-Maintained Ecosystem Restoration Components and Targets (based on 340,000 ha NDT4)

Ecosystem Component	Intended Characteristics	% of Maximum Timber Benefits	% of Maximum Forage Benefits	Current (1992) Distribution of Crown NDT4 Ha %	Initial Target Ha % (range)	Final Target Ha % (range)
Shrublands	Normally occurring areas of , non-productive forest, wetlands and brush	0	100	18,000 5%	18,000 5%	18,000 5%
Open Range*	Lands dominated by open grass/forb/shrub communities and managed primarily by manipulation of natural processes	10 (0-20)	90 (80-100)	34,000 10%**	51,000*** 15% (12-18%)	78,000*** 23% (20-26%)
Open Forest*	Lands with significant rangeland and significant timber values	50 (40-60)	50 (40-60)	288,000 85%**	131,000*** 39% (34-44%)	105,000*** 31% (26-36%)
Managed Forest* (includes christmas tree permits)	Lands providing rangeland values for 1-2 decades during the regeneration phase of timber management. During the balance of rotation, areas will be expected to provide ungulate security/snow interception cover	90 (80-100)	10 (0-20)	mostly overstocked	140,000*** 41% (36-46%)	140,000*** 41% (36-46%)

* Retention Forest and Old Growth Management Areas (as defined in Biodiversity Guidebook); distributed across these ecosystem components.

** Old growth status currently 26% > 100 years, 1% > 250 years

***Old growth status: initial/final targets: 17% >100 years, 13% >250 years (low emphasis); 34%>100 years, 13%>250 years (intermediate emphasis)

Given the breadth and importance of the Restoration initiative, a multi-agency oversight body, such as the Interagency Management Committee (IAMC) should take overall responsibility for its implementation and conduct periodic reviews. Dedicated resources will be required at the Forest District level, for planning and implementation of Restoration work. The involvement of non-government interests and resources is essential to the implementation of Restoration.

(d) *Spatial Application of Guidelines*

The Crown forest portion of the Rocky Mountain Trench, from the Montana border to Golden, contains approximately 250,000 hectares of land deemed to be fire-maintained. This land falls within the Cranbrook and Invermere Forest Districts. In the Boundary District, the lower parts of the Kettle and Granby river valleys from Grand Forks to Rock Creek contain roughly 90,000 hectares of Crown NDT4. Lesser amounts occur in the Arrow Forest District, along the east side of Lower Arrow Lake and the north side of the Pend d'Oreille River. In Kootenay Lake Forest District, NDT4 lands are found along the south end of Kootenay Lake,¹ and the Lower Goat River. Cumulatively, the Kootenay-Boundary Region contains a total of roughly 340,000 hectares of fire-maintained ecosystems, identified on map 3.10. The dry phases of certain other Biogeoclimatic variants in NDT3 and NDT5 may also be considered to be fire-maintained.

3.10.2 Operational Guidelines for Fire-Maintained Ecosystem Restoration

(a) *Ecosystem Components*

Four ecosystem components of the NDT4 are recognized for the purpose of these Guidelines: Shrublands, Open Range, Open Forest and Managed Forest². Each component has a unique mix of resource values, summarized in Table 1. The Table also shows current ecosystem component distribution, as well as initial and final targets. Targets are tentative and will be refined over the next eighteen months as a result of research, operational realities and social objectives. The Cranbrook and Invermere Districts are currently prepared to implement Restoration. The Arrow, Boundary and Kootenay Lake Districts will require additional inventory and planning concurrent with or prior to Restoration.

(b) *Planning and Inventory*

Each of the five participating Districts will include Fire-Maintained Ecosystem Restoration and management objectives as a component of Landscape Unit and lower level plans that include Crown NDT4 lands. Restoration planning must recognize the unique, multi-resource nature of the NDT4, where wildlife (both hunting and viewing), ranching, timber, environmental, christmas tree, recreational, access and fire protection interests coincide. Existing sources of Restoration planning information include Biogeoclimatic data, Forest cover maps, paired historical/modern photograph comparisons, and average weighted crown closure maps. The Invermere Encroachment Strategy should be consulted for that District, as should the Problem Forest Types Analysis for the Cranbrook District. The Trench Integrated Renewable Resource Management Plan ("The Trench Plan"), although no longer a current plan, does include a prioritization of ingrowth treatment areas in the two Districts.

¹The majority of the Crown portion of the Creston Valley is within the Creston Valley Wildlife Management Area.

² Forest Cover maps do not define Open Forest and Managed Forest. "Shrublands" is a misnomer, but is retained as it is a Forest Cover definition.

(c) Restoration Operations

Restoration prescriptions will vary from site to site, but will generally target the removal of excess immature and off-site understory trees. Table 2 proposes guidelines, to be refined as site-specific data becomes available, for each landscape component. Restoration treatments will attempt to create a complex, ecologically appropriate mosaic of habitats across the landscape, emphasizing rangeland values on poor soils and south/southwest-facing slopes, forest values on the richer sites and north-facing slopes, and a mix of the two on the balance of the landscape. Clustering of crop trees in the moistest microsites will allow for more open canopy conditions between clusters. Treatments in the Open Range and Open Forest ecosystem types will emphasize retention of the oldest or largest trees. The bulk of Ecosystem Restoration will occur within these two ecosystem components; the Managed Forest component largely defaults to current timber harvesting practices.

In the Open Range and Open Forest ecosystem components, a harvesting pass can meet target stocking initially, but unless further measures are undertaken, targets will be exceeded again after a short time. Subsequent prescribed burns will normally be required, to reduce numbers of new tree seedlings, rejuvenate the forage and browse understory, and recycle nutrients. Alternative treatments, such as mechanical thinning or spacing, may be used as a partial replacement for fire effects. All treatments subsequent to meeting modified stocking standards would be considered incremental, and would not be considered a Licensee responsibility unless by mutual agreement. Special and non-governmental funds can potentially be accessed to finance these incremental treatments.

If burning is prescribed, it should normally follow a harvesting pass that reduces initial fuel loading and laddering. Harvest slash volumes and distribution should be managed to facilitate subsequent low-temperature, ground-oriented burns. Measures must be taken to ensure post-burn survival of appropriate numbers of tree recruits. Once stands have had an initial Restoration treatment, they should become components of a long-term, landscape-level cycle of harvesting, thinning and prescribed burning entries that optimize resource flow and ecosystem health.

The following wildlife related issues will be acknowledged in arranging Restoration operations across the landscape: wildlife trees, movement and connectivity corridors, security and snow interception cover, and the need for occasional large, connected blocks of open range/open forest. In the absence of Landscape Unit Plan objectives, planning for individual entries (harvest or restoration) should examine the surrounding 250-2500 ha area to ensure connectivity and interaction with old growth, ungulate winter range and recreation guidelines are achieved. Good opportunities exist for merging Restoration objectives with Red- and Blue- listed species management objectives, including reintroductions. The proposed sharptail grouse reintroduction in the extreme southern part of the Trench is a good example.

Table 2. Kootenay-Boundary Fire Maintained Ecosystem (NDT4) Management Guidelines

Ecosystem Component	Primary BGC Variant/Site Series Targetted	General Management System Proposed*	Connectivity Requirement	Target Stocking Standards (Stems/Ha)**	Minimum Stocking Standard (Stems/ha)	Maximum Stocking Standard (Stems/ha)	Free-Growing Window	Crown Closure Threshold Triggering Re-entry	Responsibility for Implementation (<i>Lead agency italicized***</i>)
Shrublands	Various IDFdm2/6 IDFxm1/9 PPdh1/6 PPdh2/4	Inventory and periodic burns	none	n/a	n/a	n/a	n/a	n/a	<i>Ministry of Forests (MOF)</i> BC Environment (BCE) User Groups Funding Agencies
Open Range	PPdh1/2,3 PPdh2/2a,2b IDFdm1/2 IDFdm2/2 IDFxm1/2 IDFun (s. facing slopes)	Periodic harvesting, prescribed burning and/or thinning to maintain open range condition, enhancing existing or potential bunchgrass sites.	Maintain connectivity of rangelands	20 of the largest 1/3 of existing diameter range	0	75	2-5 yr	10% max	<i>MOF, Range</i> BCE, MOAFF, Forest licensees (Where harvesting occurs), Range Tenure holders, User Groups, Funding Agencies
Open Forest	PPdh1/1,4,5 PPdh2/1,3 IDFdm1/3,4,1 IDFdm2/3,1 IDFxm1/3,1,4,5 IDFun (subseric to mesic)	Periodic entries of burning, thinning and partial cutting to maintain open forest conditions and rangeland values	Provide connectivity between adjacent Open Range areas. Provide ungulate travel corridors between winter range and winter forest cover.	250 (50 of the largest 1/3 of existing diameter range plus 200 well-spaced)	76 (30 of the largest 1/3 of existing diameter range plus 46 well-spaced)	400	2-5 yr	40% max.	<i>MOF</i> BCE, MOAFF, Forest licensees (where harvesting occurs), User Groups, Funding Agencies
Managed Forest	IDFdm1/1,4,5,6,7 IDFdm2/1,4,5,6,7 IDFxm1/6,7,8 IDFun (seepage sites)	Rotational harvest entries using clear-cut or light-overstory shelterwood. Manage for timber, ungulate winter range and approximately two decades of interim rangeland values per rotation.	Maintain connectivity of retention forest and OGMA's through managed forest and open forest ecosystems. Provide winter forest cover for ungulates	1000	400-700	5000	12-20 yr	80% max.	<i>MOF</i> BCE Forest Licensees Funding Agencies

* These management systems would not generally apply to retention forest and old growth management areas.

** Stems/ha => 0.5m as per Establishment to Free Growing Guidebook.

*** Lead Agency responsible for strategic planning and approvals; operations conducted cooperatively by all listed groups, subject to funding and resources.

Restoration is not expected to conflict with Visual Quality Guidelines, since treatments will emulate natural landscapes, or with Ungulate Winter Range Guidelines, which will primarily apply in the Managed Forest Ecosystem Component. In instances where conflicts arise between these Guidelines and either the Ungulate Winter Range Guidelines or Visual Quality Guidelines, resolution will be attempted at the local planning level. Where resolution is not possible, these Guidelines will take precedence.

(d) *Rate of Restoration Treatments and Socioeconomic Considerations*

Treatment should start at a “break-even” level that offsets the current rate of ingrowth. Over a five-year period, treatment will ramp up to full implementation, stay at that level for 20 years, and then ramp down over five years so that, after a thirty-year period, implementation targets are met (see Table 3 for an example). Applying this strategy regionally will eliminate sudden changes in employment and wood supply levels, and allow for local variation to meet socioeconomic needs.

Table 3. Restoration Schedule, Using Combined Projections from the Cranbrook and Invermere Forest Districts as an Example

TREATMENT	BASE CAPABILITY (assumes no increased resources) HA/YR	ENHANCED CAPABILITY TO STABILIZE INGRESS AND TREAT BACKLOG (assumes increased resources) HA/YR
BURN	1000	2000
SPACE	700	1000
PARTIAL CUT	700	4000
CLEAR CUT	200	1000
CHIPPING	0	800
TOTAL	2600	8800

(e) *Research and Monitoring*

Work should be promptly undertaken to 1) confirm initial/final target proportions of Shrubland, Open Range, Open Forest and Managed Forest or to provide a rational basis for altering those proportions; 2) review appropriateness of Biogeoclimatic site series/variants; 3) finalize Stocking Standards for the four ecosystem components, and 4), develop canopy closure and age-class distribution criteria for each ecosystem component, based on monitoring and operational experience. These four elements of the Guidelines are interim; finalization is a priority, and should be completed within the first 18 months of operation. Other work should be undertaken to more precisely define timber and forage benefits/disbenefits at varying levels of stem density or cover. Relevant research, as well as operational experience, should be subsequently reviewed on a regular basis to ensure that these Guidelines are meeting their stated objectives, and to facilitate the adaptive management process.

3.10.3 Administration

(a) *Changes Required to Facilitate Guidelines*

Modified, ecologically appropriate Stocking Standards should be set for the Open Range and Open Forest components of the NDT4, in line with target stocking rates in Table 2. This modification is viewed as crucial to the efficient long-term management of NDT4 stands. It is recognized that Operational Planning Regulation requirements for block size and adjacency are superseded by these Guidelines, applied consistent with Biodiversity Guidebook recommendations for NDT4 patch size and rangeland seral stage. Modifications to current cruising standards should also be considered for these dry, low site-index areas, to bring cruising costs more in line with timber yields, and to adjust sampling intensity to capture differences in very low stocking rates. With current methodology, differences between stocking rates (between Open Range and Open Forest, for example) are undetectable. Government may also consider modified stumpage appraisal allowances or other fiscal incentives to encourage restoration harvesting in low site-index NDT4 sites and to accommodate treatments that incorporate rangeland as well as timber objectives. Some form of Annual Allowable Cut partitioning, directing a percentage of the cut to the problem forest types within the NDT4, should be considered. An equitable distribution of opportunities between the major forest companies and small business should be struck. Ministry of Forests silvicultural record-keeping systems need to be reviewed to ensure that unique NDT4 stocking standards and prescriptions can be accommodated. Special and non-governmental funds should be sought where shortfalls in Restoration-related research, inventory, planning or operations occur.

3.11 Guidelines for Timber Management in Timber Enhanced Resource Development Zones

3.11.1 Introduction

(a) *Guideline Intent*

To increase volumes of merchantable timber, to streamline the permitting process and provide associated employment benefits, while maintaining basic environmental quality.

(b) *General Management Approach*

The above intent will be achieved by applying the following operational guidelines within the KBLUP's Timber Enhanced Resource Development Zone (ERDZ-T) land use designation. The guidelines reflect an emphasis on promoting timber supply through application of intensive silvicultural practices, including timber harvesting on appropriate sites within the zone. Environmental stewardship on these lands will be maintained through application of FPC requirements.

Although intensive forest management will also be practiced on other lands in the region (i.e., within the Integrated Resource Management Zone (IRMZ), and potentially in selected pockets within the Special Resource Management Zone (SRMZ), the ERDZ -T reflects a relatively high concentration of sites suitable for intensive forest management practices, given the average to above average timber productivity and the absence of regionally significant environmental, recreational and tourism values on these lands. Accordingly, these lands reflect the best opportunity, based on biophysical attributes, to focus intensive silvicultural activities, including harvesting, in the long run.

(c) *Spatial Application of Guidelines*

The operational guidelines below, generally apply to the operable land base within the KBLUP's ERDZ-T designation (see Map 3.11). The following areas have been excluded entirely for :

- community watersheds
- domestic watersheds
- high and most intermediate biodiversity emphasis areas (as per the FPC Guidebook)
- most regional connectivity corridor
- caribou 1 and 2 polygons
- Coal ERDZ areas

The intent is to exclude key areas of the following from ERDZs, however more work is required to identify areas and negotiate appropriate boundaries:

- regionally significant visual values
- requirements for red listed and other blue listed species
- high value fish
- key winter ranges
- settlement lands
- ALR land

When appropriate areas can be identified, it is expected EDRZ-T guidelines, while meeting CODE standards, will take precedence over other guidelines.

3.11.2 Operational Guidelines

On appropriate sites within the operable area of the ERDZ-T, emphasis will be given to increasing timber supply through the intensive application of silvicultural regimes (i.e. various combinations of harvesting, site preparation, artificial regeneration, spacing, pruning, fertilization, commercial thinning). In particular the following practices will be promoted, within the requirements of the FPC.

(a) *Reforestation*

- Accelerated backlog (incremental) reforestation, including site preparation, planting and brushing, will be applied to harvested areas.
- Maximizing efforts to reduce regeneration delay (with exception of winter ranges).
- Larger, genetically improved stock will be planted to reduce the green-up period, achieve full site occupancy, and increase long-term yields.
- Density control to be applied rigorously at the free to grow stage.

(b) *Fertilization*

- Multiple fertilizations per rotation may be applied to suitable sites to reduce time to green-up and to increase long-term yields.

(c) *Pre-commercial / Commercial Thinning*

- Multiple, pre-commercial and commercial thinnings will be undertaken where economically feasible and biologically appropriate, to recoup mortality losses, improve timber quality and increase short-term timber supply.

(d) *Species Management*

- Optimal species selection and single species management will be applied where ecologically suited to the area.
- Effective vegetation management practices will be applied, possibly including herbicides to control competing vegetation and enhance growth of crop species.

(e) Utilization

- Enhanced utilization standards may apply (within the bounds of long-term sustainable timber productivity and basic biodiversity requirements).

(f) Rate of Cut

- Rate of cut will be guided by the results of standard watershed assessments
- Harvest ages and rotations will be determined primarily by maximizing timber volume.

(g) Biodiversity Management

- ERDZ-T areas will be managed predominantly at a low emphasis biodiversity level. Forest interior conditions will be no more than 10% of the required old seral area. The remaining 90% may be partially harvested (up to 30% of the volume in this remaining 90% may be removed in the first entry).
- Within patches, the green-up requirement between cutblocks will be based on successful silviculture planting, based on silviculture surveys, while between patches, green-up will be similar to the Integrated Resource Management Zone. See Table 1 below for preferred patch size distribution for each natural disturbance type (NDT).
- Wildlife tree patches will be implemented as per the FPC Biodiversity guidebook.

(h) Protection

- Intensive forest health surveys and effective pest management techniques will be applied to protect timber values and silvicultural investments, in accordance with FPC requirements, while minimizing impacts on significant non-timber resource values.

(i) Timber Harvesting Land Base

- Within the ERDZ-T, emphasis will be placed on increasing the timber harvesting land base through:
 - development and application of new and innovative harvesting technologies
 - increasing the utilization of stands that have been excluded (problem forest types, deciduous stands)
 - minimizing site degradation.

Table 1
Distribution of Patch Sizes for Each NDT

	Patch Size (ha)	Per Cent Forest Area Within Landscape Unit Within ERDZs
<i>NDT1</i>	<40	30
	80	30
	250	40
<i>NDT2</i>	<40	30
	80	30
	250	40
<i>NDT3</i> (for BEC subzones within Douglas-fir throughout stands in NDT3)	<40	20
	80	30
	250	50
<i>NDT3</i> (for BEC subzones with Douglas- fir restricted or absent in NDT3)	<40	10
	250	10
	1000	80
<i>NDT4</i>	<40	30
	80	40
	250	30

3.12 Access Management Guidelines

3.12.1 Introduction

(a) Guideline Intent

To provide the necessary strategic direction on access management required to balance and integrate the range of resource uses and interests.

Highways, Forest Service Roads and Operational Roads serve the public, the forest industry, small business, tourism, mining, the petroleum industry and other interests by providing access to Crown land. However, roads can pose a challenge for managing and maintaining environmental and social values. Therefore, access management must promote an integrated, flexible approach for managing the landbase and all values through the maintenance of a network of highways and forest roads, to provide access for all uses, while giving careful consideration for the siting of new roads and the regulation/deactivation/rehabilitation of existing roads in order to meet the range of KBLUP objectives and strategies.

While it is recognized that access issues are best dealt with at a more local or operational scale, these guidelines are intended to provide both strategic direction on access management to guide lower level planning and also interim direction until such lower level planning can be completed. Specific access management objectives that are to be addressed through operational level plans, such as Forest Development Plans and the regular permitting processes administered by various government agencies, are identified through the:

- Connectivity Guidelines, section 3.3;
- Grizzly Bear Guidelines, section 3.4;
- Ungulate Winter Range Guidelines, section 3.5;
- Mountain Caribou Guidelines, section 3.6;
- Recreation Guidelines, section 3.9;
- Regional objectives and strategies, Chapter 2, particularly with respect to alpine/sub-alpine areas, and;
- Resource Management Zone objectives and strategies, Appendices 1 through 7.

(b) General Management Approach

The above intent will be achieved by applying the following general measures:

- Licensed and government authorized resource users have access, including road access, to all Crown Land outside of Protected Areas for the purpose of potential resource development. The timing, location and duration of road and other forms of access will recognize and be consistent with the KBLUP management objectives and strategies, the Forest Practices Code and all other relevant government policy and legislation, to ensure sensitive values are adequately managed.
- Existing roads will be used wherever possible and the amount of new road construction will be kept to the minimum necessary for balancing and integrating access and management for all values.
- Owners of private land, holders of crown tenures or utility companies will have their access needs evaluated in all areas outside of protected areas. The goal is to seek accommodation for such access needs, including potential road access, with location and management options subject to the range of KBLUP objectives and strategies.
- Access management will be flexible and therefore able to accommodate changing technology and societal values.
- Access management will be used to maintain a range of recreational opportunities on Crown Land.
- Access restrictions, including road closures, deactivation and rehabilitation, will involve public, industry and stakeholder consultation, except when closures or restrictions are related to public safety issues. In the rare cases where roads do not meet FPC standards and must urgently be deactivated, affected government agencies will be consulted and tenure holders notified.

(c) Spatial Application of Guidelines

As was noted in section 3.12.1, specific access management objectives are outlined in various KBLUP guidelines, most of which include accompanying maps identifying the areas within the region that such guidelines are to be applied.

As well, areas of potential concern for further access development have been identified through the Resource Management Zone objectives and strategies. Such areas are deemed to involve sensitive values which require careful consideration in order to meet the KBLUP management objectives and strategies. The intention is to maintain and revise a list of areas of potential concern and identify such areas in the annual report (see Chapter 9).

3.12.2 Operational Guidelines

(a) *Access management strategies*

In order to achieve the intent of integrating and balancing access requirements, the management of all values must be flexible at the site specific level. The following “tool box” for access management includes strategies which may be used independently, or in combination, in a particular area to achieve the desired access objectives:

- seasonal road and activity restrictions through:
 - gated road closures/area closures/legislated closures to be administered through the Forest Practices Code
 - signage
 - scheduling of development, construction, deactivation (including the seasonal use of heavy equipment to minimize noise disturbance);
- type and location of road development;
- discourage the construction of loop roads and parallel roads;
- longevity of all types of roads, including requirements for deactivation/rehabilitation prior to approval of new road permits;
- industrial access only;
- two pass timber harvesting system with accompanying road deactivation/rehabilitation requirements;
- non conventional timber harvesting and silvicultural systems;
- emphasize low impact forms of access in currently unroaded areas during the early stages of mineral exploration. In some circumstances, low impact access may equate to a road;
- zoning of recreation uses (commercial/non commercial as well as motorized/non motorized) to provide a range of recreation opportunities and to support the management of sensitive environmental values;
- in areas zoned for recreation uses, the management/movement of problem bears or other wide ranging carnivores may, in exceptional circumstances, be required to maintain access for recreation uses;
- hunting and fishing regulations to redistribute the seasonal access pressures, and;
- improve management of utility corridors by managing and regulating motorized use seasonally and as necessary.

(b) *Application of Strategies*

Regular permitting and operational decision-making processes

The application of specific strategies to areas of concern will be undertaken with an integrated and planned inter-agency focus, in accordance with the general management approach outlined above. In general, the decisions on such issues will be dealt with through the regular permitting processes, including the required referrals.

The Forest Practices Code requires new road permits to address maintenance, deactivation and rehabilitation, where practical, prior to approval. This can be done through the Forest Development Planning process or, alternatively, through access management plans.

Enhanced referral process

An enhanced inter-agency referral process will be utilized for proposed new access development in areas of concern (see 3.12.1 (c)) or other areas which, through the regular permitting process, are identified as requiring additional consideration. Enhanced referrals encompasses a broader range of referees and an expectation of more stringent approval conditions.

In an access-related enhanced referral, the legislated decision-making government agency will notify an inter-agency technical review team. Membership on the technical team will consist of government staff who have in-depth knowledge of the KBLUP management objectives and strategies and who represent all agencies responsible for their development. The technical team member who represents the decision-making government agency will coordinate the process by where the team works with the legislated decision-maker to define the specifics of the process.

The enhanced referral process may include:

- additional information requirements by the proponent;
- identification of additional stakeholders to be notified through the newspaper or consulted directly and the means to receive their comments and advice;
- a joint field assessment by all affected agencies;
- a presentation by the proponent to the inter-agency review team;
- identification of the area as a priority for completion of a landscape unit plan. In exceptional circumstances, if the landscape unit planning process is deemed to be unable to address the situation within an adequate timeframe, a more immediate form of resolution at the landscape level will be recommended.

The proponent will be notified by the decision-making agency as soon as possible that the proposal is in a sensitive area and requires an enhanced referral. The inter-agency technical team will commit to working with that agency to ensure an efficient process. The decision-maker will document the rationale for decision and make it available to all interested stakeholders.

3.13 Guidelines for Providing Crown Land for Settlement Uses

3.13.1 Introduction

(a) Guideline Intent

To recognize that, where appropriate, Crown Land will continue to be utilized for settlement uses; to provide information on which portions of the landbase might be considered for settlement uses; and to describe the process that will be followed in considering settlement allocations.

For the purposes of this guideline, settlement is defined as the use of Crown land for residential, recreational, community and industrial purposes. Community uses include local parks. Commercial includes land for 'front country' tourism resorts. Industrial includes sand, gravel, soil and rip-rap quarries.

This guideline is not intended to address other settlement-type activities, including the use of Crown land for roads, utilities or communications sites as these occur in all areas of the landbase outside of protected areas. These kinds of uses are authorized by lease or license and the land base continue to be held in the name of the Province. Land used for agriculture and back-country tourism and recreation are addressed through other aspects of the KBLUP Implementation Strategy (e.g., Chapter 2 and other relevant guidelines in Chapter 3). It is recognized that commercial ski resorts are a unique land use that includes both residential, recreational, commercial and community settlement at the base, and skiing terrain on adjacent Crown land that is managed for resort use and compatible resource values.

(a) General Management Approach

Identification of specific lands that will be allocated for settlement uses cannot be achieved at the regional scale of resolution. therefore, the intent will be achieved by following the existing BC Lands policy and procedures and integrating settlement uses with other values. The objectives, strategies, guidelines and accompanying maps in this KBLUP Implementation Strategy will be utilized to ensure integration of settlement land use decisions with other values. The Growth Management Strategies (Chapter 2, Appendix A) provides additional guidance for planning and delivering settlement opportunities.

It should be noted that settlement will access only relatively small portions of the Crown land base, and only portions of the settlement corridor, that is identified on the Settlement Land Map (map 3.13), will be utilized for settlement purposes. Sales of Crown land for settlement purposes are normally in the range of 200-500 hectares. This suggests that, assuming stable settlement patterns, less than .6% of the region will be allocated for settlement purposes over the next 100 years. However, it is recognized that most settlement occurs in the low elevation valleys within the region. As a result, human settlement overlaps with critical low elevation wildlife habitats,

regional connectivity corridors, high productivity forests, etc. The information provided within the KBLUP Implementation Strategy will assist the process of integrating settlement with other land uses.

Private land is, from time to time, acquired by the Province, for habitat, park purposes or is returned because of tax reversions. As well, some settlement uses are temporary and the land is returned to resource use once the interim use is complete.

(a) *Spatial Application of the Guidelines*

This guideline can apply to any portion of the region. However, to provide understanding where settlement opportunities likely exist, provide assistance to resource managers and provide direction to lower level planning, a Settlement Land Map (see map 3.13) has been prepared. The map identifies areas likely to be considered for settlement purposes.

There are two types of settlement areas:

Community areas includes those lands within existing municipal boundaries and regional districts as well as areas that have been identified through an Official Community Plan. (This area is differentiated from the settlement corridors on 1:500,000 maps that are available for resource managers as required for further planning and decision-making. The scale of maps included in this KBLUP Implementation Strategy makes these areas too small to usefully depict.) Within the community areas there is a relatively high percentage of private land. Most of the regional population resides in or near these locations and the limited Crown land in these areas often has a high value for a variety of settlement uses. Community plans provide direction about the kind of land uses that are expected. The community areas exclude large blocks of land (greater than 250 hectares) that have been identified through Official Community Plans as being for natural resource values only.

These lands often also contain significant value for a variety of provincially managed resources. While resource management will continue on Crown lands within the community areas, it is recognized that some of these lands will, in time, be converted into settlement uses. Long term commitment to resource activities should recognize the potential for human settlement and take appropriate measures to integrate resource use activities.

Settlement corridors are areas between existing community areas. While the majority of the regions 150,000 population is located in the community areas, the settlement corridors identify lands adjacent to transportation routes where there is already extensive private lands or where specific settlement opportunities are known. Crown lands within the settlement corridors are often important to support adjacent communities for a range of activities, including landfills or quarries, that do not fit into the more intensely utilized community areas.

The amount of Crown land within the settlement corridors varies from 25-75%. This is a significantly higher percentage than that in the community areas. As a result, resource management for a range of ongoing and long term commitments occurs within these areas. Consultation with the appropriate provincial and municipal government agencies is appropriate with respect to long term resource commitments.

3.13.1 Operational Guidelines

The Province is under no obligation to accept or approve any application for settlement use. Programs and procedures change on an ongoing basis to reflect enhanced management and government policy.

Land applications will continue to be received from eligible applicants for community, commercial and industrial settlement uses throughout the land base, although the majority will be located within one of the two types of settlement areas.

Proactive identification of opportunities to provide residential, recreational, commercial and industrial lands in conjunction with communities and stakeholders will continue. While the entire land base may be considered for settlement purposes, most proposals will be in the community areas, with some in the settlement corridors. Efforts will also be made to avoid or accommodate the requirements for regionally significant biodiversity connectivity corridors (see section 3.2) and wildlife habitats. Allocations of Crown lands for settlement purposes will also consider official community plans and rural land use bylaws.

Planning initiatives may further identify specific Crown lands that should be considered for allocation and add or remove lands to the settlement areas.

(a) Consultation

In carrying out assessment of applications or of government-initiated proposals for settlement uses, there is a commitment to consultation with all interested government agencies. In addition, new uses that are proposed for the Crown land are advertised so the general public has an opportunity to provide input.

(a) *Decision-making*

In making land use decision, the Province relies on the feedback received from agencies and stakeholders and the following principles:

1. identifying the most suitable use for a parcel of land
2. minimizing conflicts and incompatibility
3. using land efficiently and effectively
4. contributing to the provincial economy
5. supporting community development, public works and institutional uses
6. maintaining a high quality environment
7. protecting important physical and biological features
8. allocating Crown lands responsibly
9. recognizing and respecting First Nations interests
10. conserving and managing aquatic lands
11. cooperating with other government agencies
12. allocating and using Crown lands fairly
13. administering Crown lands fairly
14. retaining options for future land use
15. maintaining consistency with Growth Management Strategies
16. consideration of regional district and municipal official community plans and regional district rural land use bylaws.

Decisions rely on the information received from referrals to achieve the above principles. The data available in the KBLUP Implementation Strategy will enhance decision-making.

3.14 Subsurface Resources Guideline

3.14.1 Introduction

(a) Guideline Intent

To describe the management of subsurface resources and recognize the need for flexibility in all resource management guidelines, based on the unique nature of subsurface resources. Exploration for these hidden resources requires access to as much land as possible. However, advanced exploration and development activities occur over a relatively small area. Therefore, the KBLUP confirms the acceptability of access for, and activities related to, subsurface resource exploration and development on all Crown lands outside of protected areas. These activities will respect known sensitive values, and honour the intents of other KBLUP resource management guidelines, through specific permitting conditions. A flexible approach by all resource managers will be required to achieve KBLUP objectives.

For the purposes of this guideline, subsurface resources are defined as bedrock and placer minerals, coal, oil, natural gas, coalbed methane and geothermal resources. The definition does not include groundwater resources. Also, for the purposes of this Guideline, references to permitting processes are intended to be generic and cover all application review and approval processes for subsurface resources.

Large-scale development proposals, including mines, processing facilities and pipelines, are reviewed through the Environmental Assessment (EA) Process. The EA Process will evaluate the degree of compatibility of a development proposal with the specific KBLUP management objectives and guidelines relevant to the vicinity of the development. The KBLUP confirms that such development proposals are an acceptable land use on all Crown Lands outside of protected areas.

(b) General Management Approach

Through the KBLUP decision, government committed to provide certainty of access to subsurface resources for exploration and development activities. As noted earlier, the hidden nature of subsurface resources poses particular challenges to managing other resources relative to subsurface resources. Mineral deposits, for example, cannot be moved, consequently exploration or development activities can not be transferred to other sites. This constraint requires that the management of all other resources and activities at these sites must be sufficiently flexible to accommodate subsurface resource activities.

Permit applications will be reviewed to ensure consistency with the direction provided through the KBLUP and the Implementation Strategy, and will be implemented through existing regulations. For minerals, the new and emerging Mineral Exploration Code is anticipated to be a key mechanism for implementation of such decisions. For energy resources, the normal tenure review process and activity referral processes will be utilized. Using these various procedures to

ensure a streamlined and efficient permitting system delivers another key commitment in government's KBLUP decision.

In the early stages of exploration, activities cover a very extensive land base and usually involve minimal impacts to other resources. Advanced exploration and development activities may result in impacts to other resource values. However, such impacts are concentrated on a small land base, often over a relatively short period of time. In such circumstances, all resource users and managers equally share the responsibility of accommodating the work. Permits for this work will address mitigation of the short-term impacts, to the degree that is possible, and ensure long-term reclamation.

The KBLUP value maps and guidelines are available to explorationists to identify site-specific management concerns in advance of planning work and submitting permit applications. The permitting and approval processes for subsurface resource activities administered by the Ministry of Employment and Investment (MEI) will also identify these concerns through well-established inter-agency referral processes. MEI decision makers will consider the sensitive values and associated guidelines, and apply appropriate approval/permit conditions.

MEI will provide up-to-date subsurface resource information to other agencies during landscape level planning and in response to routine referrals for land use proposals (for example, Commercial Back-country Recreation applications). This information will be provided to ensure that subsequent land-use decisions do not unduly restrict subsurface resource activities, and maintain consistency with the KBLUP.

(c) *Spatial Application of the Guidelines*

This guideline applies to all Crown land outside of Protected Areas.

In **Integrated Resource Management Zones (IRMZs)** the permit application review processes described in the Operational Guidelines (section 5.14.2) will be utilized.

In **Special Resource Management Zones (SRMZs)**, sensitive values tend to be more concentrated and/or there is likely to be overlapping sensitive values which will require consideration in preparing and assessing a permit application. Consequently, specific permit conditions are anticipated to specify how respect for sensitive values will be achieved. In SRMZs, access for exploration activities will conform with the KBLUP Access Management Guidelines (see section 5.12) and may involve the use of enhanced referrals and permitting conditions. Small no-staking reserves (for minerals) will be considered for sensitive sites. These will be identified through lower level planning processes and will involve full industry consultation.

In the **Coal Enhanced Resource Development Zones (ERDZ-Coal)** the priority management emphasis is on the coal resources and their exploration, development and production. Within these four zones (C-E01 to C-E04), it is anticipated that there will be intensive coal mining and related activities. It is recognized that ecosystem function may be temporarily compromised by

coal exploration, development, production or use activities on these lands. However, long term maintenance of environmental quality of all areas impacted will be addressed through innovative reclamation and mitigation technologies as determined through the permitting processes.

Energy and mineral (non-coal) resource objectives and strategies in ERDZs-Coal are identical with those in IRMZs and access to these resources is in no way diminished by the enhanced coal management objectives. Furthermore, access opportunities to coal occurrences in IRMZs (e.g. the known Sage Creek Deposit in C-I04) and SRMZs are not limited by their exclusion from the ERDZ-Coal designation.

In the **Timber Enhanced Resource Development Zones** (ERDZs-Timber) subsurface resources will be managed in a manner identical to that in IRMZs. Efforts will be made to ensure integration and compatibility of such resource development activities is achieved.

3.14.2 Operational Guidelines

All applications for exploration and development projects will be dealt with in a timely and efficient manner. The objective of the various permitting processes is to determine appropriate permit conditions under which the project will be carried out. All relevant information in the KBLUP and Implementation Strategy will be used in the permitting review process.

Various statutory multi-agency review procedures apply to subsurface resource projects which seek to identify and mitigate impacts and ensure reclamation of disturbed sites. In the case of mineral and coal projects, these include Mines Act Permit Applications, whether through the Notice of Work referral process or the Kootenay Mine Development Review Committee. Site-specific Mines Act permit conditions, including appropriate reclamation security, together with inspections by MEI staff, will ensure appropriate management of mineral or coal exploration and development.

An enhanced referral may be utilized for activities proposed to occur at sensitive sites. Specifically for access-related activities proposed for such areas, the KBLUP Access Management Guidelines (section 5.12) outline the referral process. An enhanced referral may involve some combination of: wider than normal range of referees; public notification and consultation; pre-approval site inspections; and an expectation that enhanced mitigative measures may be required. In the case of proposals for new road access in sensitive areas, the enhanced referral may involve a regional committee of technical experts from appropriate government agencies.

In the case of major new mines, or major expansions of existing mining operations, which exceed thresholds defined in the Reviewable Projects Regulation, the Environmental Assessment Process will be applied, prior to projects proceeding to the permitting stage.

For subsurface energy resources, the Oil and Gas/Geothermal Tenure Review Process and Activity Referral Process will be utilized. The Environmental Assessment Process applies for

processing facilities and pipelines under Provincial jurisdiction that exceed the threshold defined in the Reviewable Projects Regulation”.

Chapter 4 Protected Areas

4.1 Introduction

One of the purposes of regional and sub-regional land use planning processes, including the Kootenay/Boundary Regional Land Use Plan, has been to implement the provincial government's protected area strategy (PAS). The PAS has two goals:

Goal 1 - Ecosystem Representation: To protect viable examples of the natural diversity of the province, representative of the major terrestrial, marine and freshwater ecosystems, the characteristic habitats, hydrology and landforms, and the characteristic backcountry recreational and cultural heritage values of each ecosection.

Goal 2 - Special Features Protection: To protect the special natural, cultural heritage and recreational features of the province, including rare and endangered species and critical habitats, outstanding or unique botanical, zoological, geological and paleontological features, outstanding or fragile cultural heritage features, and outstanding outdoor recreational features.

The Kootenay/Boundary Regional Land Use planning process dealt primarily with the PAS Goal 1. Further work is required to complete the Goal 2 process.

As a result of the Kootenay/Boundary Regional Land Use planning process, the provincial government, in July 1995, established sixteen new protected areas. Through designation under the provincial Park Act, all new protected areas have become class A provincial parks. Consequently, the terms 'provincial parks' and 'protected areas' are used interchangeably in the KBLUP Implementation Strategy.

The establishment of the new protected areas plays a key role in the realization of the Plan's environmental conservation objectives, particularly through contribution towards general biodiversity maintenance and the protection of key habitat areas for maintenance of species health. The parks also contribute significantly to regional recreational and cultural heritage objectives, as well as to long-term economic objectives.

The following section identifies general management objectives and strategies for the region's new protected areas. A description of each new park and an indication of further planning priorities is included in Table 4.1.

4.2 General Management Objectives and Strategies for New Parks in the Kootenay/Boundary Region

PROTECTED AREA OBJECTIVES	MANAGEMENT STRATEGIES
Park Planning	
<p>1. To develop comprehensive park master plans, over time, for each new protected area in order to ensure the maintenance of the conservation, recreation and cultural heritage values within the new protected areas.</p>	<p>1.1 Park master plans will be developed for each new protected area in accordance with the availability of budget resources and the general park planning priorities identified in the overview of new protected areas within Appendices 1-7.</p> <p>1.2 Park master plans will be developed with the benefit of extensive public and inter-agency participation. Among other things, the plans will define park-specific management objectives, acceptable levels of use, accepted uses, zoning, and other strategies that will minimize conflicts, help ensure the integrity of important park values.</p> <p>1.3 Park master planning processes will consider existing uses and management objectives and strategies (as identified in this regional plan and in operational level plans) for lands that are adjacent to the protected areas.</p> <p>1.5 Provincial park master planning processes will include consultation with tourism industry representatives in order to examine potential commercial opportunities within provincial park land, subject to the prime goal to protect the conservation, recreation and cultural heritage values within the parks. Commercial opportunities will be assessed with a view towards limiting / locating the development of physical commercial infrastructure (e.g., roads, lodgings, staging areas, etc.) on the periphery of park boundaries in order to minimize park impacts.</p> <p>1.6 Pending the development of comprehensive park master plans for each new protected area, the management guidance provided in BC Parks' "<i>Management Direction Statements</i>" will be used to direct park management and operations.</p>

	<p>1.7 Upon completion of Goal 2, management direction statements will be prepared for those new protected areas.</p> <p>1.8 Resource issues adjacent to park boundaries will be identified and the responsible government agencies will work together to address them.</p>
<p>Pre-Existing Tenures and In-Holdings</p>	
<p>2. To recognize the legal rights of pre-existing tenure holders and landowners within newly established parks in the region, and to deal fairly with those interests.</p>	<p>2.1 Pre-existing mineral and timber tenures and other tenures / encumbrances associated with commodity extraction (e.g., gravel reserves) will be discontinued within new protected areas. The terms of discontinuance will be negotiated with owners of pre-existing tenure interests, in accordance with provincial policy respecting resource rights compensation. Tenure discontinuance negotiations will also consider ongoing silviculture obligations (e.g., free-to-grow requirements), and rehabilitation of harvested areas and roads in key locations.</p> <p>2.2 Pre-existing tenures within new protected areas for utility rights-of-way, communication sites, grazing, commercial backcountry recreation, commercial heli-skiing or hiking, guide-outfitting, trapping, water works and use, etc., will be permitted to continue, in accordance with the existing management conditions attached to those tenures. In the future, the management conditions attached to those tenures may be amended to comply with the requirements of park master plans that are developed for individual protected areas.</p> <p>2.3 Existing grazing authorizations issued under the Range Act within new (1995) protected areas will continue to be managed according to the Range Act are fully transferable. Where pre-existing tenures other than Range Act tenures lapse or are voluntarily surrendered by a tenure holder, the province is under no obligation to re-issue the tenure rights to a new party. Whether or not tenure rights are to be re-issued should be resolved through the protected areas management planning process.</p> <p>2.4 Existing owners of private land in-holdings within new parks will continue to exercise their property rights, and existing opportunities for access to those properties will be addressed.</p>

Natural Occurrences	
3. To protect key park values and adjacent private property, as appropriate, from natural occurrences in protected areas.	<p>3.1 Where appropriate, natural occurrences in new parks, such as fires, insects, forest diseases, will be managed as in other provincial parks, through consultation and joint action by BC Parks, BC Environment and the Ministry of Forests at the District level.</p> <p>3.2 Fire management plans will be developed for areas within new parks that are proximate to residential settlement, and where traditional land management includes burning for winter range enhancement.</p>
Park Management	
4. To maintain ecosystem representation and ensure protection of key representative features.	<p>4.1 Park management emphasis will be placed on maintaining the ecosystems and features for which these areas were established.</p> <p>4.2 Parks will be managed to compliment biodiversity objectives across landscape units, where appropriate.</p> <p>4.3 Where existing grazing tenures occur, alpine and subalpine grassland meadows will be maintained in conjunction with MOF through application of high elevation grassland guidelines.</p> <p>4.4 Sound park management relies on good resource information. BC Parks, BC Environment and the Ministry of Forests will work together to collect resource inventory for the new parks.</p> <p>4.5 The natural diversity of previously harvested sites and affected habitats will be restored through negotiation of silvicultural obligations.</p> <p>4.6 Previously open forests and grasslands have become ingrown as a result of fire suppression. Where appropriate, vegetation management will be undertaken primarily using fire to restore natural grasslands.</p>
5. To ensure protection of key species and their habitats.	<p>5.1 BC Parks will work with other agencies to ensure connectivity of wildlife habitat between the park and surrounding area.</p> <p>5.2 Opportunities to establish grizzly bear benchmarks for scientific study and</p>

	<p>management will be investigated.</p> <p>5.3 Rare, endangered and at risk species, and their habitats will be protected.</p> <p>5.4 Ungulate habitat and cover and site specific features will be considered in management processes.</p>
<p>6. To maintain backcountry recreation opportunities.</p>	<p>6.1 While BC Parks will continue to manage parks to provide a wide range of recreational experiences, protected areas will provide the primary opportunities for primitive and wilderness recreation. Where appropriate, existing access and trails within protected areas may be closed or decommissioned to support primitive recreational experiences. Similarly recreational access to some areas may be limited to maintain the quality of recreational experience.</p> <p>6.2 Levels of recreational use and associated impacts will be monitored and management applied where necessary to maintain the wilderness qualities, where appropriate.</p> <p>6.3 BC Parks will work with MOF to promote good visual design of logging and appropriate access management in areas adjacent to parks.</p>
<p>7. To plan and manage parks in a manner which reflects the cultural heritage.</p>	<p>7.1 Local First Nations will be consulted to establish traditional use in the area.</p> <p>7.2 Options to work in cooperation with First Nations in the management of area will be identified in the treaty process.</p> <p>7.3 European history will be considered in the management actions.</p>

Table 4.1

**New Protected Areas (Class A Provincial Parks)
Established as a Result of the Kootenay/Boundary Regional Land Use
Plan**

Park Name	Approx. Area (ha)	Priority for Develop't of Park Master Plan
<i>East Kootenay</i>		
Akamina - Kishinena	10,921	Moderate
Bugaboo	13,646	High
Upper Cummins	6,1081	Low
East Purcells	36,938	Moderate
Elk Lakes	17,245	High
Gilnockie	2,822	Low
Height of the Rockies	53,964	High
<i>subtotal</i>	<i>141,717</i>	
<i>West Kootenay</i>		
Gladstone	39,361	High
Goat Range	78,936	High
Granby	40,845	High
Kianuko	11,677	Moderate
Lockhart Creek	3,751	Moderate
West Arm	25,254	High
Syringa	4,191	Low
Kokanee Glacier Extension	6,203	Moderate
West Purcells	32,662	Low
<i>subtotal</i>	<i>242,880</i>	
<i>Total Area</i>	<i>383,182</i>	

Note: the Findlay corridor within the East Purcells is protected under the *Environment and Land Use Act*.

Chapter 5 Kootenay-Boundary Economic Transition Plan

5.1 Economic Transition Background

The Kootenay-Boundary Land Use Plan (KBLUP) will contribute to the long term environmental, social and economic sustainability of the region. By creating land use certainty, the KBLUP provides a basis for private and public planning and investment in natural resource and community development. However, the KBLUP implies change to historic methods of resource management. Therefore, there is need for both short and long term transition planning, both at the community level and with respect to particular sectors of the economy.

Implementing the KBLUP over the next five to ten years will bring about some potentially substantial changes for individual families, various communities and the region in general. Given this adjustment, the region will go through a period of economic and social transition to move to the prescribed sustainable future envisioned in the KBLUP. This transition needs to be planned and implemented in a cooperative manner between workers, communities, industries, First Nations, and all levels of government.

The Kootenay-Boundary Economic Transition Plan (KBETP) is comprised of the following key components:

- an Inter-Agency Transition Committee;
- a set of ongoing and new initiatives.

Economic Transition Planning

Economic transition planning is a phrase used in this document to describe the way in which government is able to respond to changes in regional land use.

Building a transition plan requires the following types of information:

- establishing a framework (objectives, policies, programs);
- understanding the current situation (profile, outlook, "base case");
- defining the impacts of proposed changes (multiple accounts analysis);
- assessing vulnerability or risk due to changes (risk assessment);
- identifying opportunities, resources and an action plan.

Establishing a Framework

Economic development objectives were developed in 1994 by the Kootenay Regional Advisory Group and provide an appropriate base for KBLUP transition planning. They are as follows:

- to encourage diversification of the region's economy;
- to encourage economic development which benefits the greatest number of communities in the region, while minimizing risk to others;

- to encourage and provide regional support to community-based economic development efforts;
- to pursue implementation of economic development initiatives which maximize use of the existing labour pool and provide new employment opportunities for future generations;
- to be selective about economic development opportunities, focusing on those which are sustainable in the context of the natural environment and which offer the opportunity to enhance or improve social conditions within the region and with communities;
- to integrate economic planning with land and resource decisions.

There is an extensive list of policies, programs and associated resources to support economic transition. Some of these include:

Provincial and Federal Government:

- Resources Jobs Commissioner
- Community Skills Centres
- Forest Worker Agency
- Community Futures
- Human Resources Development Canada
- Skills Now
- Ministry of Small Business, Tourism and Culture, and other government ministries
- Grazing Enhancement Fund

Crown corporations and other non-governmental organizations:

- Forest Renewal B.C.
- Columbia Basin Trust
- Columbia Basin Fish and Wildlife Compensation Fund

Understanding the Current Situation

A variety of information sources can be drawn upon to ensure a current and complete knowledge of the economic, social and environmental situation in the Kootenay-Boundary region. Some of these include:

- sector and community profiles,
- base case information from the multiple accounts analysis,
- job tracking and economic trend information,
- regional economic strategies such as the 1994 KRAG economic plan, and
- community visions and economic strategies.

Defining the Impacts and Assessing Vulnerability or Risk

A multiple accounts assessment (MAA) framework was used to describe the environmental, economic impact, and community implications of the KBLUP Implementation Strategy. The MAA evaluates the integrated effects of implementing the Forest Practices Codes, the KBLUP and other provincial strategies (e.g., the Grizzly Conservation Strategy). This assessment is an important source of information for the development of the transition plan. It provides an

analysis of potential employment and income impacts for sectors likely to experience a reduction in activity, and also highlights those sectors that may benefit from the KBLUP.

However, the analysis of employment and income impacts does not identify the location and timing of these impacts, or provide an indication of which communities may be the most vulnerable to employment loss, in terms of current economic dependencies. It also does not provide an understanding of what those potential impacts may mean for any particular community (i.e., while employment and income may be affected, will this jeopardize a community's longer-term economic health?).

To overcome this lack of community specific information, government will need to work in partnership with communities. A focus of this work will be to understand which communities are most vulnerable to change and help prioritize action plan initiatives.

Current Realities

There are a number of current issues that will have some influence on the creation and implementation of the regional economic transition plan:

- the March, 1995, government land use plan announcement identified many economic initiatives; where appropriate, the economic transition plan for the KBLUP Implementation Strategy will reinforce these earlier initiatives;
- many communities in the region have invested significant efforts to develop community visions and economic development strategies; this previous work will provide a basis for economic planning;
- the strategic regional land use vision contained in the KBLUP should be strongly considered in the investment decisions made by key economic development agencies; as much as possible, Forest Renewal BC, Columbia Basin Trust, and the KBLUP direction should be consistent;
- current fiscal restraint evident at federal and provincial levels will necessitate the creative use of partnerships among all participants in social and economic transition (local government, senior government, industry, labour and other key sectors).

Development of a Kootenay-Boundary Economic Transition Plan

The transition plan presented below is the product of the various components outlined above, and most importantly the input from various regional government and non-government representatives. While the framework is regional and sectoral, its fundamental focus is the community.

The Kootenay-Boundary economic transition plan is presented in two sections:

1. KBETP reporting structure,
2. Economic transition plan components.

5.2 The Kootenay-Boundary Economic Transition Plan

The Kootenay-Boundary Economic Transition Plan (KBETP) has been developed to accompany the Kootenay-Boundary Land Use Plan (KBLUP) Implementation Strategy. The plan is both proactive, working with communities and industry sectors prior to any potential disruption, and responsive, lending assistance to communities and workers in need.

The objectives of the KBETP are to:

- 1) ensure communities and individuals have access to economic development initiatives;
- 2) provide assistance to workers and their communities during employment disruptions;
- 3) reinforce government's commitment to the 1995 KBLUP announcements;
- 4) enhance some of the 1995 announcements; and
- 5) develop new initiatives that will assist individuals and their communities through the transition over the next decade.

KBETP Reporting Structure

To undertake the transition plan the following reporting structure is being developed. A regional Inter-Agency Transition Committee will be established. Close linkages will be maintained with the Kootenay-Boundary IAMC, and therefore the resource agencies within the region, by having IAMC representation on the Transition Committee. At the provincial level, coordination between government agencies necessary to address economic transition issues related to land use planning is the responsibility of the Land Use Coordination Office. The provincial government agencies participating in the regional Inter-Agency Transition Committee will, with support from the Land Use Coordination Office, report to the Deputy Minister's Committee on Land Use. This will ensure senior government understanding and support for the work of the committee.

The Inter-Agency Transition Committee will have two main functions:

- 1) in partnership with communities, to provide leadership overseeing the implementation of the transition plan, and immediate assistance to communities experiencing employment disruptions;
- 2) to co-ordinate the various agents' activities within government to ensure an integrated delivery of the government's commitments.

The following provincial government agencies and staff will be represented on the Inter-Agency Transition Committee:

- Resources Jobs Commissioner,
- Ministry of Education, Skills and Training,
- Member Representative from the Kootenay-Boundary IAMC

The following additional organizations within the region will be invited to participate in order to ensure the necessary coordinated approach to economic transition:

- Columbia Basin Trust
- Forest Renewal B.C.
- Human Resources Development Canada.

A Transition Committee Chair from within the provincial government will be assigned to lead and coordinate member functions. The Chair of the Transition Team will report regularly to the Deputy Minister's Committee on Land Use.

Economic Transition Plan Components

A. Community Monitoring

Monitoring the economic situation of communities in the Kootenay-Boundary region will help to identify which communities are at risk before major employment disruptions occur, and will provide local information about community planning efforts and employment trends. The Transition Committee will meet regularly, or as needed, to discuss this monitoring information.

B. Sectoral Initiatives

The following initiatives are intended to focus on sectors where the impacts are likely to occur and on sectors which present the most opportunity for future development. The section begins with the forestry sector, followed by the mining and energy sectors, agriculture, and tourism.

1. Forestry

The transition of the forestry sector from its current state to that envisioned in the KBLUP will occur over the next ten years. The projected reduction in available timber for harvest from Crown land may affect communities in a number of ways. Some areas may not be affected at all; however, in other areas companies may respond by reducing the work year, by laying-off employees, or by shutting down harvesting and milling operations.

Employment increases that could result from more labour intensive forestry practices, planning requirements, and potential increases in value added manufacturing are not reflected in the potential reduction in person years of employment outlined in the multiple accounts analysis. Given the time frame, much of the reduction may be absorbed through attrition rather than lay-offs. However, the timing of impacts should not mask the changing face of community economic dependencies in the region, and individual impacts on workers and families.

To address these changes, the KBLUP Implementation Strategy has highlighted opportunities, or values, that can contribute to an enhanced forestry sector in the region. The following initiatives expand on these opportunities and are intended to ensure that those who do face job disruptions are provided with support and re-employment opportunities.

Forest Community Economic Development Program

Forest Renewal BC is funding the Forest Community Economic Development Program to help eligible forest dependent communities and First Nations strengthen their forestry sector.

Communities have access to a limited amount of resources through the following four funds:

- the Forest Sector Planning Fund - the fund is intended to provide support for development of forest sector profiles and action plans;

- the Project Feasibility Fund - provides funds for forest dependent communities to commission forestry based development studies, develop business plans, and prepare investment promotional material;
- the Immediate Response Fund - the fund is intended to help forest dependent communities develop a community transition plan in response to an immediate employment crisis and to identify new employment and economic opportunities to replace lost forest jobs;
- the Implementation Fund - supports implementation of local forest sector action plans and economic development initiatives.

The program has provided funds to a number of Kootenay-Boundary communities to begin planning, and identify and develop new forestry opportunities. The following seven communities have recently accessed funds:

- Golden
- Revelstoke
- Creston
- Kaslo
- Nakusp
- Grand Forks
- Ktunaxa-Kinbasket Tribal Council

Golden, Revelstoke, Creston, Kaslo and the Ktunaxa-Kinbasket have completed plans and are developing specific project proposals. All forest sector communities will be encouraged to access this funding envelope.

Forest Worker Agency: Proposed

Bill 12 (BC Forest Renewal Amendment Act, 1996) was given Royal Assent this summer by the British Columbia Legislature. The Act requires that Forest Renewal BC establish a Forest Worker Agency to provide for priority placement of displaced forest workers onto Forest Renewal BC projects. Criteria will be established to determine who qualifies as a displaced forest worker. (Note: The Agency is under development and the descriptions here may not fully reflect the initiative when delivered.)

The program is intended to include the following general actions:

- identification and tracking of displaced forest workers;
- needs and ability assessment to identify individual employment goals and "job ready" workers;
- identification of training requirements and/or options;
- identification of suitable Forest Renewal BC funded projects.

The following initiatives are scheduled or underway:

- An operating mandate for the Forest Worker Agency is currently under development at Forest Renewal BC. The program is scheduled to be operational by Fall 1997.
- While the program is under development, Forest Renewal BC will continue to give priority to licensee-led projects which propose to employ displaced forest workers.

- Before the implementation plan is developed, Forest Renewal BC will undertake consultation with stakeholders to find out how their concerns can be addressed.
- The Kootenay-Boundary region is scheduled to be the second region for implementation of the Forest Worker Transition Program, after the Pacific Region.

Contact Forest Renewal BC for further information.

Forest Community Business Program

Forest Renewal BC, together with Community Development Corporations (CDCs) and Business Development Bank have partnered to provide business start-up and expansion financing that would not otherwise be available to forestry related companies. Loans to a maximum of \$75,000 are available through CDCs. The Business Development Bank is able to loan up to \$250,000. More funds are being made available as needed. A greater number of loans are being accessed through CDCs than through the Credit Union program. Forestry Renewal BC is currently bringing on additional lending capacity to increase the availability of loans in the \$75 000 to \$250 000 range.

Forest Renewal BC Forest Land Base Investment

Forest Renewal BC funds ongoing land based projects across the province. For 1996/97, Forest Renewal BC has targetted investments of \$34 million for land based projects in the Kootenay-Boundary region with the potential of supporting more that 500 new and existing forest sector jobs. The 1997/98 budget is expected to be similar. Plans are being developed for the Kootenay-Boundary region which identify priority areas for silviculture and resource investment projects. Investments for 1996/97 include:

- \$13 million for 221 watershed restoration projects - aimed at renewing the forest environment and providing jobs;
- \$12 million for 69 enhanced forestry projects - to increase the forest productivity, enhance the value of timber harvested, increase the harvestable land base, and create jobs;
- \$9 million for 134 operational inventory projects - to provide better information on timber and non-timber resources.

Specific Projects (1996/97 examples):

- Italy-Sutherland Creek Watershed Restoration Project (Boundary Forest District) - funding \$138 381;
- Forest Health Inventory (Invermere Forest District) - funding \$190 650;
- Silviculture projects, spacing pruning an surveys (Golden Forest District) - funding \$477 000;
- Fish Habitat Inventory (Kootenay Lake Forest District) - funding \$40 000.

The following initiatives are scheduled or underway:

- Forest Renewal BC and the Ministry of Forests are undertaking a gap analysis to identify additional investment projects for the 1997/98 fiscal year.
- The Ministry of Forests is undertaking longer-term investment planning that will identify a range of project opportunities beyond the 1997/98 fiscal year. The objective of this

planning is to direct silviculture investment to projects that will lead to the largest increase in fibre supply.

- Target projects to specific areas where job loss is expected - the Economic Transition Committee can have a significant role to play in this area.

Contact Forest Renewal BC, the Ministry of Forests, or the Resources Jobs Commissioner for further information.

Fibre Supply and Availability

The Ministry of Forests is working on a number of timber resource supply issues that are intended to mitigate some of the reductions in the timber supply and meet fibre allocation requirements. The following initiatives are divided into a section covering some of the ongoing efforts to mitigate the timber supply reductions, and a second section dealing with the allocation of harvestable timber.

Fibre Supply Mitigation

The following examples are aimed at maximizing the volume of timber coming from the harvestable land base.

- **Timber supply mitigation** - The Ministry of Forests is continuing its preparation of a report, "Nelson Forest Region Forest Mitigation Strategy," which is evaluating the forest resource in the Nelson Forest Region to determine options for mitigating AAC reductions. Job creation stemming from this strategy are related to harvesting of problem forest types and increasing silviculture activity.
- **Deciduous Timber Resources and Super Utilization** - Two recently completed studies, "Hardwood Utilization in the Nelson Forest Region" and the "Kootenay Super-Utilization Study" are currently under review by the Ministry of Forests.
- **Enhanced Forest Management Pilot Project** - This project is underway in the Invermere Forest District to implement "enhanced" forest management concepts. The project will embrace the full range of resource values and will also emphasize social values, such as employment and community stability. Findings from this project may then be used to define forest practices in all zones.
- **Kinbasket Lake Underwater Logging** - Forest Renewal BC funded a study to develop the technology for harvesting underwater standing timber. The report is expected in late 1996 and should provide information on the economic feasibility of this harvesting system, the quality of wood recoverable, and some estimates of the potential volumes available for salvage.

Fibre Availability:

The following efforts are aimed at ensuring producers have access to all available sources of wood.

- **Small Business Forest Enterprise Program** - 80 887 cubic metres of timber in the Kootenay Lake Forest District, previously unallocated, was divided into a 55 887 cubic metre allotment for one or more replaceable forest licences, and an allocation of 25 000 cubic metres for two community forest ventures in the Kaslo and Creston areas. Allocation of these licences is expected soon.
- **Woodlot Licences** - the 1995 KBLUP economic strategy announced that 48 new woodlot licences would be created in the region. Completion of this allocation is scheduled for December, 1997. As a result, the total number of woodlots in the region will increase to 101. Some have been advertised and government is continuing to complete the allocation.
- **Small Scale Salvage Program** - A small scale salvage program can enhance resource stewardship by more fully utilizing timber not normally processed, thereby providing employment opportunities for small operators and economic benefits to small communities. The Arrow Forest District is the pilot district for the Kootenay-Boundary area.
- **Reallocation of Small Business Timber Sales** - Reallocation of small business timber sales from SBFEP Category 1 sales to 16.1 sales. Initiative will provide more timber to smaller processors and remanufacturers.
- **Timber Salvage from Lakes and Reservoirs** - Various licences have been awarded in the Nelson Forest Region to salvage floating merchantable debris and sunken logs, and to harvest underwater standing timber. The Nelson Forest Region, with the assistance of Forest Renewal BC, is exploring ways to increase salvage in these areas. A Timber Sale Licence has been tendered for salvage rights on Kootenay Lake, although no decision has been made to date.
- **Regional Log Sort Yard Initiative** - Objectives of a log sort yard are better utilization and economic recovery of logs through optimal use, higher value added and more employment per cubic metre, and better access for smaller manufacturers and artisans. Prior to developing such a yard, a regional study is recommended to assess the feasibility, location, organization, and appropriate level of government involvement. Implementation of the study findings are recommended if the project is feasible.

Contact regional or district offices of the Ministry of Forests for further information.

B.C.'s Value Added Strategy

The objective of B.C.'s Value Added Strategy, announced in the Spring of 1996, is intended to assist the value added wood manufacturing sector grow as a means of achieving B.C.'s forest jobs strategy.

Many of the essential ingredients to an expanding forestry value added sector are dealt with in other sections. Fibre supply and availability issues are dealt with above as is access to investment

funds. Training and other long-term forestry education initiatives are discussed in the next section. Two other ongoing initiatives in the Kootenay-Boundary region deal with wood products promotion and development and are briefly described here:

Kootenay Value Added Wood Products Promotion and Development:

Kootenay Value Added Wood Forum - The forum, Wood Works '96, is the third annual wood products value added conference held in the Kootenay-Boundary region and is scheduled for October, 1996. The objectives of Wood Works '96 are to:

- increase the production, marketing and skill capabilities of existing manufacturers through a trade show;
- exhibit woodworker's achievements through a juried competition;
- encourage creative woodworking through a student competition;
- increase the awareness of business career opportunities in the wood industry; and
- highlight educational and training career opportunities for regional students.

Kootenay Woodvine Value Added Manufacturing Association - The Kootenay Woodvine is a value added manufacturing association established following the 1994 Kootenay Value Added Wood Forum at Creston. Woodvine's goals for 1996/97 are to develop communications, such as a quarterly journal, to develop a directory of Kootenay-based value added manufacturers, and to develop training sessions in production and business.

Value Added Marketing Program - funded by Forest Renewal BC which focuses on support for producer groups.

Forestry Training and Education

Forest sector training covers a wide range from woodlands based training to high value-added production training. The Kootenay-Boundary region has numerous training opportunities in all aspects of forestry education. The following summarizes the majority of programs available within and outside the region:

Wood Products Manufacturing Training

Programs for a higher skilled value added wood products manufacturing labour force is a major focus of the provincial value added strategy. The following programs are part of that focus:

- Kootenay School of the Arts, Wood Products Design Program - Nelson;
- Selkirk College, Woodworking program;
- College of the Rockies, planer mill maintenance and the Wood Products Institute;
- Value Added Skills Centre - Abbotsford;
- National Centre for Advanced Wood Processing - UBC.
- Value Added Training Program - wages and training for value added operations funded by Forest Renewal BC.

Forest Renewal BC Sponsored Local Training Activities

Forest Renewal BC sponsors numerous short-term training that fall under three broad headings:

- Forest Worker Employment Training Program (FWETP) - assists with tuition for at-risk or displaced forestry workers;
- Land-based activities - contain training component if workers require new or up-graded skills;
- Other training - funding proposals are submitted to Forest Renewal BC and are assessed to determine employment linkages and benefits to the forest industry and workers.
- Examples of current training include the following:
 - entrepreneurship training;
 - cedar bagging in Golden;
 - value-added manufacturing;
 - forestry technicians school in Greenwood; and
 - planers and graders for a small lumber mill.

Revelstoke Community Skills Centre

With the assistance of a forestry training coordinator, training programs being developed in conjunction with mill and woodlands employees from the Revelstoke area include the following:

- computer skills,
- cable logging,
- multi-skilled development (to expand the skill set of forestry workers in order to reduce their dependency on a single, seasonal industry), and
- career planning.

The following is scheduled or underway:

- Forest Renewal BC is undertaking research on what skills are needed and anticipated, and what skills are available. Based on this research, plus the proposals that have been submitted to Forest Renewal BC, they hope to develop policy on funding training activities.
- Once policy is developed, it may be possible for Forest Renewal BC to become more pro-active (e.g., identify areas in the forestry industry where training may be needed and then promote training activities among employers and workers).

Contacts for further information:

Those interested in these and other training program should contact local community Skills Centres, regional offices of the Ministry of Education, Skills and Training, Human Resources Development Canada, or Forest Renewal BC.

2. Mining and Energy Sector

The KBLUP Implementation Strategy ensures that opportunities for energy, mineral, and coal resource exploration and development will be available outside protected areas. Land use designations help to provide the necessary land use certainty required to attract the level of investment needed for exploration and development by maintaining opportunities in all non-protected areas.

The KBLUP, however, designates 16 new protected areas that will prohibit exploration and development opportunities for mining and energy projects. While this does not affect existing operations, it does limit new development potential and associated employment benefits.

The following projects are in various stages of the environmental review process:

- **Mining projects:** Fording Cougar Pit - expansion of Greenhills Mine.
- **Energy projects:** Hydro electric power plant projects: Keenleyside, Waneta, Seven Mile, Revelstoke Unit 5, Brilliant dams.

Initiatives that are ongoing and will help to further mining and energy development in the Kootenay-Boundary region include:

- **Geo-physical Survey:** the airborne regional geophysical survey, funded by the Government of BC, is intended to aid in the search for Sullivan Mine-type related mineral occurrences. Results from two of the three areas surveyed in the East Kootenays were released in July. Results from the remainder of the survey will be released in early 1997. To date, the survey has led to new claims staking, but it is much too early to know if significant new mineralization will be found as a direct or indirect result of this survey. Moreover, development of any new mines would take a number of years, and would be partly dependent on external factors such as international markets.
- **Prospectors Assistance Program:** This program provides funding for prospectors. In the last two fiscal years, an average of \$100,000 per year in applications have been approved under this program for the Kootenay-Boundary region. It should be determined if further funding is warranted.
- **Industrial Minerals and Value-Added Processing:** The Kootenay-Boundary region leads the province in industrial mineral production. Government is committed to encouraging the exploration of new opportunities in industrial minerals and value added processing, such as silicon by-products and construction building blocks. B.C. Government sponsored training in industrial minerals prospecting is scheduled in the Kootenay region for the Fall, 1996.
- **Columbia Valley Energy Development:** The Columbia Valley Energy Options study was completed in 1996. The objective of the study was to identify and assess cleaner and more affordable energy options. The study results indicate that satellite LNG or propane, geothermal heat pumps, and/or demand side management are promising energy options. Liquid natural propane (LNP) satellite stations appear to be the most promising for short-term development. Communities are pursuing these options with the provincial government.
- **Independent Power Producers:** A number of independent power producer projects have been proposed for the Kootenay-Boundary region. They include a wood waste power and natural gas generator at Skookumchuck for use in the pulp mill, with any surplus power sold to BC Hydro.

3. *Agriculture*

The objective of the KBLUP Implementation Strategy is to maintain the current level of grazing activity in the region. However, a 5 - 10% reduction in AUMs will likely result in localized areas, because of increased grazing management requirements of the FPC, new protected areas, and areas with site specific management requirements. The Implementation Strategy attempts to mitigate these impacts by enhancing grazing opportunities in the region and encouraging diversification in other areas of the agriculture sector.

Grazing Enhancement Fund - The Grazing Enhancement Fund (GEF) for the Kootenay-Boundary region was announced in 1995. The purpose of the GEF is to maintain and enhance range resources and livestock grazing opportunities, while meeting the conservation and environmental objectives outlined in the Kootenay-Boundary Land Use Plan.

- ***Funding***

For the Kootenay-Boundary region the GEF is worth \$750,000 per year for five years. Funds not expended in one year may be requested for use in subsequent years. Forecasts for future spending will be part of the normal budgeting process. Qualifying projects are eligible for 100% funding from the GEF, or partial funding where cost-sharing or partnering is proposed.

- ***Current Status***

A Range Enhancement Advisory Committee (REAC), comprised of ranching, wildlife, environment, First Nations, timber and provincial government representatives has been created to review and assess funding proposals. The REAC has been encouraging parties affected by the implementation of the Land Use Plan to develop management strategies and, if appropriate, apply to the GEF for implementation funding.

The REAC is beginning to assess funding applications from the region; however, it has not yet recommended the approval of any project proposals. If the REAC determines that an area is going to be adversely affected by the implementation of any land use decisions, it could adopt a proactive policy and seek partners in implementing projects under the GEF.

Areas likely to be adversely affected by land use planning should be identified and access to the GEF should be promoted. Contact regional offices of the Ministry of Agriculture, Fisheries and Food for further information.

Agri-tourism Value-Added Conference - An agri-tourism and value added products conference is scheduled for November 29, 1996. The conference will provide workshops on business aspects of agri-tourism and value added products. Experts will be on hand to provide business start-up, marketing and development information. The conference is being funded by "Partners in Progress" and is being organized by the Ministries of Agriculture, Fisheries and Food, and Small Business, Tourism and Culture.

Niche Product Newsletter and Part-time Coordinator - An Agriculture Niche Products Study was undertaken to examine regional opportunities and was followed by a workshop in March

1996. The study and workshop were sponsored by the Ministry of Agriculture, Fisheries and Food, and the Ministry of Small Business, Tourism and Culture. Recommendations coming from the workshop (March, 1996) are to hire a part-time coordinator and produce a newsletter.

- The newsletter would provide up to date information on regional activities in specialty agriculture as well as information on new technology and business practices.
- The Ministry of Agriculture, Fisheries and Food has been developing production, harvesting, and marketing information for many of these products and will act as the facilitator for information dispersal and industry organization.

Farm Business Development and Management Training - The Ministry of Agriculture, Fisheries and Food has offered numerous courses in the Kootenay-Boundary region. One program, the Canadian Farm Business Management Initiative is a joint offering of the B.C and federal governments. Several other types of training programs are being examined in areas of agriculture business. The farming community will be consulted for content requirements and delivery of courses.

Agriculture Extension Initiatives: The Ministry of Agriculture, Fisheries and Food has a number of ongoing and developing extension initiatives in the Kootenay-Boundary area.

Examples are:

- work with the Christmas Tree industry in the East Kootenay to modify cultural and marketing practices in order to stay competitive and open up new markets;
- the development of the late season cherry industry in the Creston Valley targeted at high return non-traditional markets.

4. Tourism Sector

Commercial tourism and outdoor recreation opportunities will benefit from implementation of the Kootenay-Boundary Land Use Plan. Examples of initiatives intended to enhance tourism stays and take advantage of new protected areas include the following:

Commercial Backcountry Recreation (CBR): As part of the Economic Strategy outlined in the 1995 Land Use Plan, accelerating new applications for commercial backcountry recreation development in the Kootenay-Boundary region was given a high priority. Government continues its commitment to this sector's development and recognizes its importance to communities. BC Lands has committed to the CBR process by adding one additional staff to manage the approval process.

The following action is underway to further assist CBR development in the region:

- BC Lands is pursuing the use of temporary permits to aid smaller businesses develop commercial backcountry operations,
- a review of the provincial CBR policy is currently underway.

Forest Renewal BC Recreation Program: The Forest Recreation Program was established for funding and enhancement of forest-based recreation projects and for the opportunity to promote forest values and

support economic stability in forestry dependent communities. Three sub-programs comprise the Recreation Program: forest recreation management, forest interpretation, and forest recreation infrastructure. Communities should contact Forest Renewal BC for further information.

Recreation Strategy: The Tourism Action Society of the Kootenays has commissioned a recreation study "Nelson Forest Region Recreation Development and Management Strategy: Phase 1 - Kootenay Lake and Arrow Forest Districts Pilot Project."

The purpose of this study is to identify outdoor recreation projects on public lands not managed under the Commercial Backcountry Recreation policy. The study will assess the supply of existing outdoor recreation opportunities and identify where the available infrastructure can improve. The study will also provide recommendations for the future development, management, interpretation, and promotion of outdoor recreation sites, facilities, and trails, and will recommend processes for implementation of the strategy. Expected completion: end of March, 1997.

Circular Rail Excursion Tours: A recent conference was held to develop regional awareness and assess interest in developing "Heritage Triangle" circle rail tours. Participants came from B.C., Alberta, Idaho, and Montana. A feasibility study is now required to determine the concept's economic potential, followed by development of a business plan.

Rails to Trails: Rails to trails involves the conversion of unused railway corridors to hiking and biking trail systems. The Rails to Trails Council of BC recently conducted a "Boundary Pathway" project which has led to the convening of a rail trail management planning strategy. The planning strategy will involve stakeholders from different sectors including outdoor recreation, tourism, forestry, ranching, and BC Lands.

BC Parks Strategies: The Protected Areas Strategy has substantially increased the amount of land preserved from future industrial resource development, such as mining and forestry resource extraction. These newly designated lands offer many recreational opportunities. However, increasing the level of recreational activity on these lands will first require an assessment of the appropriate type and level of use to ensure environmental objectives are not compromised.

The Ministry of Environment, Lands and Parks is currently identifying and permitting existing use levels in protected areas. Further work will be necessary to identify suitable types and levels of additional use in these areas.

Kootenay-Boundary Tourism Marketing Analysis: Under the direction of the Tourism Action Society of the Kootenays, the study is intended to determine the market demand for a variety of tourism products in the Kootenay-Boundary region. This information will build on the recently completed tourism profile - "Tourism Profile of the Kootenay-Boundary Region: Phase I - Product Supply." The final outcome of these phases is a tourism development strategy for the region.

C. Major Project Development

There are a number of investment projects that will have a significant impact on the Kootenay-Boundary region. These developments benefit from the assistance of government during permitting and project review processes.

All major projects requiring environmental assessment are reviewed through the planning and permitting process by the Environmental Assessment Office and generally involve the Ministry of Employment and Investment. Recent major Kootenay-Boundary projects that are in, or have been in various stage of the environmental assessment process include the following:

- Mining/mineral processing projects: Fording Cougar Pit - expansion of Greenhills Coal Mine, Moose Creek magnetite mine, Bodie Coal Dump project, Elkhorn Quarry extension, McGillvray Coal development.
- Energy projects: Keenleyside Powerplant, Waneta Generation Station Upgrade, Cascade Heritage Power, Seven Mile Unit 4 generation station, Revelstoke Unit 5 turbine addition, Brilliant Dam hydro electric power plant projects, and Crowsnest Co-generation project.

Other projects not currently in the environmental review process, but which could be assisted include the following:

- Slocan Valley graphite mine, Silicon Plant in Kimberley, Kimberley ski and golf resort development, Circular Rail Tour development, Fernie Snow Valley, Island Lake Lodge, Mount MacKenzie, Kinbasket backcountry recreation proposals, Panorama Resort development.

The provincial government will maintain and enhance its efforts at assisting project developments by:

- ensuring that project proponents have early access to appropriate ministry liaisons at the Ministry of Employment and Investment and the Environmental Assessment Office, and that community and development proponents understand the regulations and permitting process;
- having the Ministry of Small Business, Tourism and Culture continue to assist where necessary with small and large project development in all sectors of the economy.

D. Columbia Basin Trust/Columbia River Treaty Downstream Benefits

The Columbia Basin Trust (CBT) will be an important means of project identification and source of investment funds in the Columbia Basin. The CBT was established by the Provincial Government in order to return a share of the downstream benefits derived from the Columbia River Treaty to the Columbia River Basin region. The CBT will be invited to be a member organization of the Inter-Agency Transition Committee.

The objectives of the CBT is to invest, manage or otherwise employ its income and resources for the ongoing benefit of the Columbia Basin. It will provide for economic development, the preservation and enhancement of the environment, and the general well-being of the people.

The CBT's primary planning tool is the Basin Plan; expected completion of this plan is July, 1997. One of the longer term considerations in drafting the Basin Plan is to create jobs through investment opportunities. The CBT will be an important resource for transition planning in the region. The Basin Plan will be developed with input from communities.

A complementary relationship between the KBETP and the CBT Plan will be ensured through the Inter-Agency Transition Committee.

E. Columbia Basin Fish and Wildlife Compensation Fund

The Columbia Basin Fish and Wildlife Compensation Fund was officially announced in June 1993 and is a joint initiative between BC Environment and BC Hydro. The fund was created to help sustain and enhance the fish and wildlife populations in the Canadian portion of the Columbia River Basin. Sixty fish and wildlife projects were funded in the 1995/96 fiscal year. Seventy-six projects have been approved thus far for the 1996/97 fiscal year.

While the Fund does not focus on economic development initiatives, projects funded under this program can result in spin-off benefits.

F. Community Strategies - in progress

Transition planning is based on the cooperative efforts of individuals, communities, local governments, the provincial government, and other Crown Corporations and organizations whose goal is a sustainable economy within a sustainable land use environment. In the case of the Kootenay-Boundary region, this transition planning reflects the vision within the KBLUP. The intention of the Economic Transition Plan is to make available a number of tools for individual communities and community members to use as they plan the future development of their economies.

The initiatives and programs outlined in the sections above are some of the tools communities can access to assist them in transition work. A proactive and effective way of ensuring this access is to establish some form of formal process that will link the efforts of all government levels, community organizations, and industry. Government recognizes the importance for communities to develop community driven and designed plans, and with the various tools outlined above, communities can more effectively direct their planning efforts. The following framework describes how the Provincial Government can contribute to this multi-partnered process.

Identifying Communities at Risk

The first priority is to work with individual communities to determine community vulnerability and ensure awareness of available programs. This task can be made easier using several sources of information:

- community monitoring information,
- an assessment of community risk of employment loss, and
- knowledge of community organizational capacity.

This information must be combined with local input. Communities that require the most up front planning assistance will be identified through discussions between government and community representatives. This information will be reported directly to the Inter-Agency Transition Committee.

Community Planning

Communities may solicit the assistance of the Inter-Agency Transition Committee and its agencies for the preparation of community economic development plans. Through funding sources such as, where appropriate, the Forest Community Economic Development Program and other Forest Renewal BC envelopes, investment funding sources such as Columbia Basin Trust, and expertise from regional provincial government representatives, communities can identify goals, and planning and development priorities. In some communities this transition work has already begun. Other communities likely to undergo change in the next few years and in need of planning assistance will be identified and encouraged to access these opportunities.

Community Priorities

Numerous communities have already identified priority projects. A selection of some priorities can be grouped as follows.

Infrastructure projects:

- road and highway work,
- water, sewer and solid waste facilities,
- downtown revitalization,
- school construction,
- hospital upgrades,
- recreational services.

Forestry:

- value added manufacturing,
- community forests,
- woodlands projects,
- integrated forest worker training,
- alternative harvesting techniques.

Tourism development:

- local trail development,
- project planning and development,
- marketing and promotion of tourism products,
- hospitality training.

Small business development:

- small business training,
- access to financing,
- business information services.

Community Economic Development:

- strategic planning,
- Economic Development Commissions.

Chapter 6 Plan Management and Administration

The following sections identify measures to adopt, implement, monitor, and amend the Kootenay/Boundary Regional Land Use Plan and Implementation Strategy.

6.1 Plan Adoption

The Kootenay/Boundary Land Use Plan was announced in March 1995 and, as such, represents the approved, corporate policy direction of the British Columbia government. The Implementation Strategy will be presented to government for similar approval and sign-off by the Ministers of Employment and Investment; Forests; and Environment, Lands and Parks, as confirmed through execution of the *Letter of Regional Land Use Plan Adoption* (see preface). Such approval of the Implementation Strategy will follow a period of public and First Nations consultation and completion of a “20 year look ahead” analysis which is designed to provide greater clarity with respect to the compatibility and applicability of the management objectives, strategies and associated guidelines. Following approval, conveyance of the letter of adoption, together with copies of the plan documents to implementing government agencies will signal that the Implementation Schedule has been confirmed as approved, corporate policy direction of the British Columbia government.

The second method of KBLUP and Implementation Strategy adoption is declaration of the appropriate elements that pertain specifically to forest management practices that are relative to the three operational plans of the Code, as a higher level plan, pursuant to the *Forests Practices Code Act of British Columbia*. This is achieved by ministerial order, also signed by the Ministers of Employment and Investment; Forests and Environment, Lands and Parks. Further work is required to identify which elements of the KBLUP Implementation Strategy should be legally declared a higher level plan.

Adoption of the Kootenay/Boundary regional land use plan and implementation strategy using these mechanisms will signal both a policy and legal commitment to implement the plan according to its stated provisions.

6.2 Plan Implementation

Full implementation of the Kootenay/Boundary Regional Land Use Plan is anticipated to require a number of years to achieve. The budget capacity of the province, the complexity of specific projects and the need to integrate KBLUP implementation with existing legislated decision-making processes are key determinants for how many of the implementation activities can be achieved within a particular timeframe.

Delivery of the KBLUP Implementation Strategy will primarily occur through the ongoing delivery of government programs, policies and initiatives, pursuant to relevant legislation, regulations and resource management guidelines. For some agencies, the guidance provided through the KBLUP Implementation Strategy can be immediately incorporated into their decision-making following government approval of the Strategy. For example, individual permit approvals can be evaluated within the context of the Implementation Strategy. Alternatively, some resource uses are defined through a multi-year operational planning process (e.g., 5 Year Forest Development Plans and Range Use Plans) or permitting/tenure system (e.g., existing permits for production mines and commercial backcountry recreation tenures). It is important to note that integration of the KBLUP Implementation Strategy with such multi-year operational planning and permitting processes will occur over a number of years (see section 6.3).

In some cases, specific projects within the Implementation Strategy can be delivered by a single government ministry or agency, while most require an integrated approach involving several different government agencies working together. As a result, a coordinated approach to establishing implementation priorities is required.

Creation of an Annual Corporate Workplan

The Kootenay Inter-Agency Management Committee (IAMC) of the provincial government will oversee the development of an annual corporate workplan which identifies the priorities and necessary sequencing for implementation actions. The workplan will be created within the allocated budget resources of the agencies involved, recognizing that subsequent government direction could result in change to the annual workplan mid-stream. Working in concert with the Land Use Coordination Office, the IAMC will ensure the necessary staff and funding is available and committed by each government agency to complete a Plan implementation action before it is placed into the annual workplan. The IAMC will also work with other levels of government and funding agencies, as appropriate, to ensure the annual workplan is coordinated with other initiatives ongoing within the region.

The corporate workplan will include:

1. Identification of priority projects that require the involvement of two or more ministries, for example:
 - domestic watershed planning
 - access management
 - Provincial Grizzly Bear Conservation Strategy
 - park master plans
 - Wildlife Management Area plans
 - range land rehabilitation
 - recreation planning
 - etc.

2. Identification of key supporting actions that are necessary to complete the priority projects, including both actions that require the involvement of two or more ministries and those that are solely the responsibility of one agency, but are linked to other KBLUP Implementation Strategy projects. Some examples of key supporting actions include:
 - public consultation
 - mapping and classifying domestic watersheds
 - training in landscape design
 - establishing visual quality objectives
 - inventories upgrade, particularly for old growth forests
 - monitoring and reporting system
 - Enhanced Forest Management Project in the Invermere District
 - definition of grizzly bear road density targets
 - etc.

3. Given the close relationship between the KBLUP Implementation Strategy and the Forest Practices Code, the workplan will ensure the necessary sequencing of FPC implementation actions with the implementation of the KBLUP.

4. The relationship of the priority projects and key supporting actions to multi-year operational planning processes (see section 6.3).

The annual IAMC workplans will be made public prior to the fiscal year in which they are to be delivered. The IAMC is also charged with coordinating the various agency's activities to ensure integrated delivery of the workplan commitments, recognizing that actual delivery of projects will occur through the work of the respective government agencies (see Figure 6.1). Government agencies will provide status reports on their projects thus enabling the IAMC to monitor the on-going status and/or effectiveness of workplan implementation (see section 6.5). A comprehensive progress report will be made public annually (see section 6.6).

6.3 Subsequent Land Use Planning

Strategic Lower Level Planning

The KBLUP and Implementation Strategy provide regional-level strategic guidance for land use. Refinement of the strategic guidance at the local scale will be required and is, in fact, acknowledged in many of the Implementation Strategy management objectives and strategies. A variety of local level strategic land use planning initiatives can be expected, including:

- landscape unit plans (for individual landscape units, or groupings of units) to fulfill FPC implementation requirements and which will address a range of values and issues;
- integrated rangeland planning to deal with grazing and rangeland ecosystem management priorities;
- recreational planning to ensure a range of recreational opportunities continue to exist and are integrated with resource development activities;
- settlement land use planning pursuant to the *Municipal Act* -- to develop official community plans or regional growth strategies -- will occur under the jurisdiction of municipalities and regional districts, and;
- future local land use planning processes, not presently anticipated, may be proposed and undertaken, at various scales, to respond to area-specific issues, or to capitalize on opportunities.

In all cases, the expectation is that these subsequent land use planning initiatives and the resulting products will be guided by, and consistent with, the strategic direction provided by the KBLUP and Implementation Strategy. Indeed, there is a legal requirement for consistency between the provisions of a strategic level, regional land use plan and lower level FPC strategic and operational plans, where the provisions in a strategic regional land use plan have been declared a higher level plan pursuant to the *Forests Practices Code Act of British Columbia*.

The IAMC will be responsible for developing the terms-of-references for subsequent lower level strategic planning processes for Crown land and resources. In doing so, IAMC will specify the requirement that subsequent planning products be consistent with the management direction identified in the KBLUP and Implementation Strategy. The planning process terms-of-reference will also identify the planning methods, mechanisms for public participation and the planning products expected to flow from the process. In exceptional circumstances, a lower level land use planning process, through the acquisition of new information, may require an amendment to the Kootenay/Boundary Regional Land Use Plan or Implementation Strategy. The requirements for such an amendment will be evaluated according to the criteria outlined in section 6.8 below, and, if required, the appropriate amendment to the regional plan or implementation strategy will occur prior to the adoption of the lower level plan.

Multi-Year Operational Planning Processes

For the forestry sector (and resource uses and management which are linked with forest management practices), delivery of the KBLUP Implementation Strategy and the Forest Practices Code must be integrated into the required five-year planning process. Forest licensees are required each year to

prepare Forest Development Plans (FDP) that spatially identify proposed harvesting activities for a five year period. The Ministry of Forests issues instructions to the licensees at least four months prior to when the FDPs must be submitted to government for consideration. Such instructions incorporate any new government policy direction. Given that the Implementation Strategy will be delivered over a number of years, it will be necessary to provide operational interpretations of the Implementation Strategy so that clear instructions can be given to the forest licensees. In general, one to three years of future forestry operations are already approved through previous forest development plans and cutting permits. Therefore, there will be a time lag between when aspects of the Implementation Strategy are articulated to the licenses and when such management practices are reflected on-the-ground.

There are two main vehicles for ensuring that the KBLUP, Implementation Strategy and the Forest Practices Code are delivered through the forest development planning process. Firstly, Memorandum of Understandings (MOU) between the affected government agencies have, and may continue to be, used to clarify the guidance and changes which need to be articulated to the licensees. Secondly, the establishment of landscape units, including finalization of boundaries and objectives for the defined areas, must be consistent with the KBLUP Implementation Strategy (as required through the Forest Practices Code). As a result, a confirmation and clarification of the regional level guidance will be expressed at a more local scale through the establishment of landscape unit objectives.

Currently, the MOU is the primary delivery vehicle for the Implementation Strategy and the strategic planning aspects of the FPC as the plan for establishing landscape units is not expected to be complete before the fall of 1997. Over time, landscape units will be established across the region. As this process unfolds, it will replace the need to use MOUs (see Figure 6.2).

The Forest Practices Code also requires that five-year range management plans be undertaken. A staggered schedule is used to review and renew the plans. Therefore, the degree to which the Implementation Strategy is incorporated into the range management plans depends on the timing of the review and the extent to which specific projects under the Implementation Strategy have evolved.

6.4 Public Involvement Opportunities in Subsequent Land Use Planning

A strong history of public involvement in the Kootenay/Boundary region has provided important experiences to build from in defining continued opportunities for meaningful public involvement. Given the variety of landscapes, issues and cultural differences between communities, a flexible approach to future public involvement will be undertaken in the region. This approach will primarily utilize existing groups and structures within communities rather than impose a formal, consistent approach across the region.

The Kootenay IAMC will provide regional coordination and support for future interactions with the public on the KBLUP and Implementation Strategy. As subsequent planning at lower levels must be consistent with the regional plan, it is important that information exchange and public education on the technical work outlined in the Implementation Strategy is undertaken. This will ensure that both government and the public can effectively identify priorities for further dialogue and public involvement which reflects the capacity limits of all affected parties. As a result, public education on the KBLUP and Implementation Strategy will:

- clarify which decisions have been made through the KBLUP and Implementation Strategy;
- what future work is merely technical implementation of the decisions outlined in the KBLUP and Implementation Strategy and, for the most part, are requirements for landscape unit planning in order to fully implement the FPC (see section 6.3);
- what outstanding decisions must still be addressed at the landscape level which, by their nature, lend themselves to further public involvement. These issues generally are outside of the requirements for landscape unit planning under the FPC. However, such issues may best be addressed at a scale similar to landscape units (a single, or group of, watersheds). Agreements reached on such issues will become part of the overall 'plan' or information base for that landscape unit. However such agreements, unless they relate directly to implementation of the FPC, will not be considered for definition as landscape unit 'objectives' under the Code.

6.5 Plan Monitoring and Reporting

Monitoring of the Kootenay/Boundary Regional Land Use Plan and Implementation Strategy will occur at two main levels:

- Implementation Monitoring will assess the extent to which the management strategies have been or are being delivered.
- Effectiveness Monitoring will assess the degree to which the management strategies are effective in successfully achieving the particular objectives which they are intended to promote. This level of monitoring will be based on agencies' ongoing research programs, as well as through assessment of progress towards objectives using pre-defined measurement indicators. The results from this level of monitoring will be used as a primary adaptive management tool, to indicate adjustments in the strategies and other government programs,

policies and procedures that may be warranted in order to more effectively realize the stated objectives.

Where monitoring findings reveal the need for regional plan or implementation strategy amendment, the Kootenay IAMC will be responsible for coordinating the appropriate amendments, in accordance with the amendment provisions in section 6.8 below.

6.6 Annual Public Report

The Kootenay IAMC is responsible for oversight and delivery of plan implementation and effectiveness monitoring, and for issuing an annual public report on monitoring results.

The annual monitoring report will include:

- actions taken to conform with plan direction;
- results of the effectiveness monitoring in achieving the management objectives;
- proposed actions to respond to the monitoring results; and,
- an updated workplan (section 6.2).

Following the release of the monitoring report, the Kootenay IAMC will hold two public meetings, one in each of the West and East Kootenays, to review the report and solicit public comment.

6.7 Plan Interpretation and Dispute Resolution

Public or agency concerns regarding how the KBLUP and Implementation Strategy are being interpreted, or how specific practices are occurring, will be addressed in the same spirit that the plan was developed.

The public are invited to express any concerns regarding specific resource management practices, or general interpretation issues related to KBLUP management objectives and strategies, directly to the affected government agencies. Where there is an existing review or appeal process (e.g., the Forest Practices Code), the concern will be dealt with through it. In other cases, the responsible manager will respond to the concern in writing. If the matter is not satisfactorily resolved, the concern will be forwarded to the Kootenay IAMC to determine if the decision is consistent with the approved plan and implementation strategy and define the necessary actions for resolution.

6.8 Plan Amendment

(a) Unscheduled Plan Amendments

A clear goal of the Kootenay/Boundary Regional Land Use Plan is to provide land use stability and certainty, partly by providing strategic direction to lower level planning. However, it is also recognized that adaptive resource management, as a response to uncertainty, may lead to refinements of the regional plan and/or Implementation Strategy, based on research/monitoring results. Similarly, other events may trigger the need to consider an unscheduled amendment. Unscheduled amendments may arise as a result of:

- new information which suggests the need to refine the regional plan and/or Implementation Strategy (e.g., inventory, research, monitoring results),
- the conclusion of a major project proposal review (e.g., Environmental Assessment process decision) which differs from the management direction expressed in the regional plan and/or Implementation Strategy,
- extraordinary circumstances arising from the outcome of a local level planning process
- a significant disturbance to a particular area within the region (e.g., fire, insect/disease outbreak),
- a government decision in the form of a Cabinet directive, or the adoption of new legislation or regulations.

The Kootenay IAMC will be responsible for assessing unscheduled amendment proposals and for determining what action will be taken. If an amendment is required, the Kootenay IAMC will assess whether the issue is substantial or of a minor, non-contentious, housekeeping nature that is more appropriately incorporated into the regional plan and/or Implementation Strategy at the time of the next scheduled amendment. In assessing the need for an unscheduled amendment, the IAMC will apply the following guidelines in determining the significance of the proposed amendments.

Amendments will be considered substantial if the change will result in:

- amendment of the planning area boundary to take-in a substantial amount of new land area, or the deletion of substantial land areas from application of the plan.
- significant change to a land use designation that would result in re-designation of approximately 5% or more of a unit's area.
- amendment to a particular objective or strategy that would significantly change the priority given to the use of resources in the area for which the change is proposed.

Substantial amendment proposals will require public consultation and evaluation of the social, economic and environmental implications of the proposed amendment. Commercial/industrial proponents of amendments will normally be responsible for conducting public consultation and evaluation to standards identified by the Kootenay IAMC (or through other appropriate agencies, such as the Environmental Assessment Office, in the case of a proposed amendment arising from a major development proposal).

Unscheduled substantial amendments will be decided by the three plan approving ministers, as the authorities responsible for plan adoption and substantial amendment decisions. A amendment decision may also require revision to a higher level plan declaration order, under the *Forests Practices Code Act of British Columbia* in effect for the subject area.

(b) Scheduled Plan Amendment

The Kootenay/Boundary Regional Land Use Plan and Implementation Strategy are also subject to a scheduled comprehensive review to commence at the eighth anniversary of the plan and to be completed by the tenth anniversary. The Kootenay IAMC may also consider annually whether or not a comprehensive review is warranted prior to the scheduled plan review.

Comprehensive plan reviews will be conducted in conformance with prevailing provincial land use planning policy direction. The Kootenay IAMC is responsible for establishing the plan review terms-of-reference in accordance with that policy direction, and for incorporating opportunities for public participation in the review process.

Figure 6.1 Government decision-making and reporting structures for the KBLUP

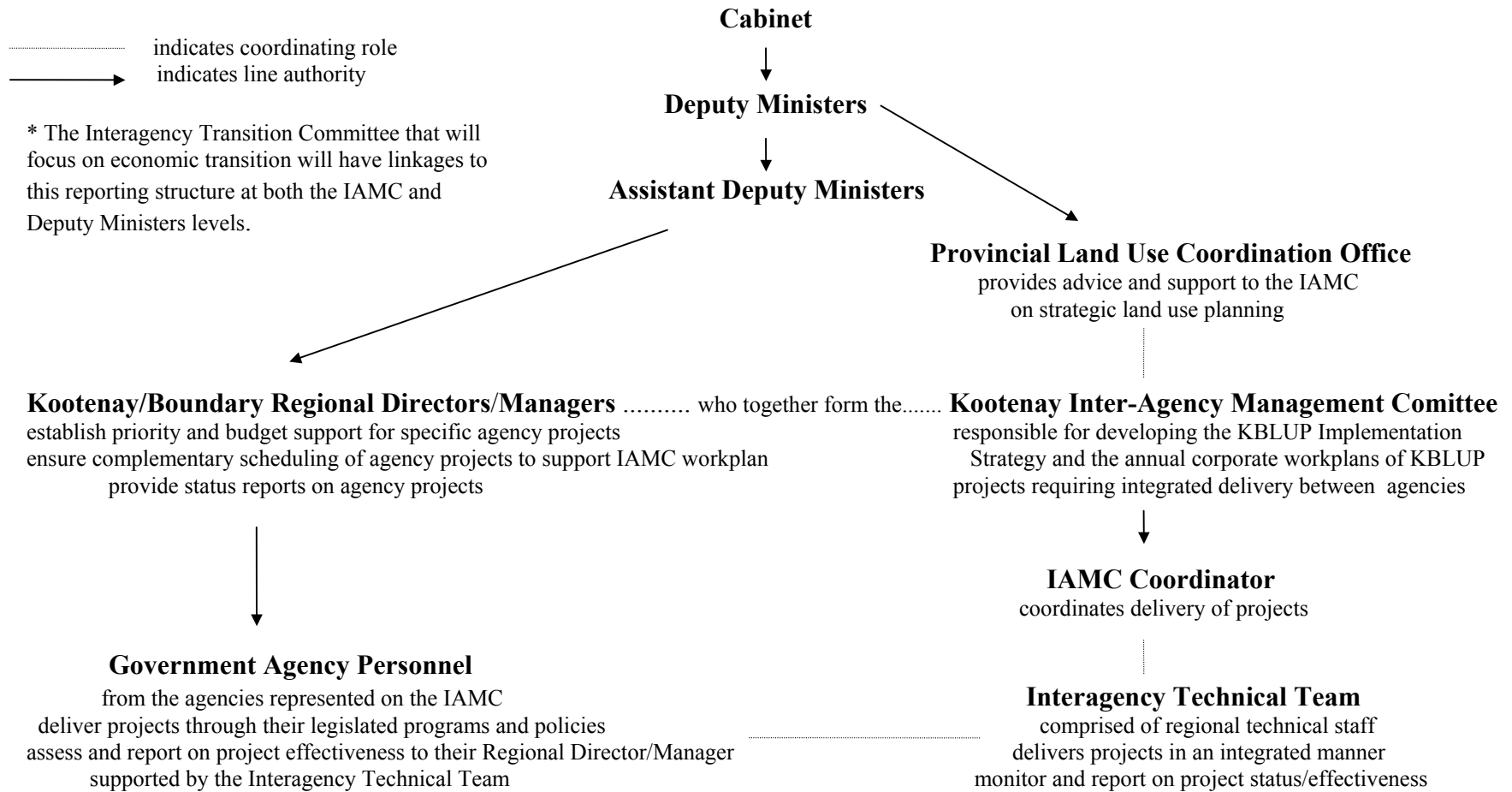
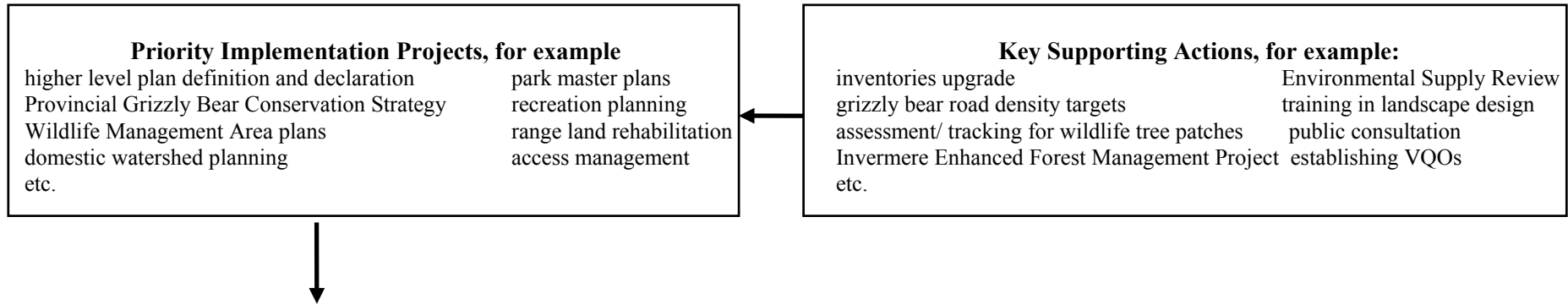


Figure 6.2 Integration of KBLUP and FPC Implementation into Forest Development Plans



Primary Delivery Vehicles to guide forest licensee instructions	Key Dates for providing written instructions to Forest Licensees which incorporate aspects of the KBLUP Implementation Strategy and Forest Practices Code				
	October, 1996	Oct. 31, 1997	Sept. 30, 1998	Sept. 30, 1999	Sept. 30, 2000
Memorandum of Understanding between affected government ministries	Results in partial FPC and KBLUP implementation across the region.	Substantial reflection of the KBLUP implementation and, as defined through government policy, full compliance with FPC across the region.	Substantial reflection of KBLUP implementation, full compliance with FPC for areas within the region not covered by established landscape units.	Full KBLUP implementation* and full compliance with FPC for the much diminished area of the region that is not covered by established landscape units.	MOU becomes unnecessary when landscape units are established across the entire region.
Landscape Unit establishment process (including finalizing boundaries and objectives)		Plan completed (timetable, methodology) for establishment of landscape units across the region.	Priority landscape units established, objectives consistent with KBLUP.	Second priority landscape units established, objectives consistent with the KBLUP.	Full establishment of landscape units.

* Full KBLUP Implementation means that long term, ongoing initiatives have been initiated.

Glossary

The following terms are provided to assist in the review of the KBLUP Implementation Strategy. It is recognized that a technical working glossary will be developed and evolve over time as the Implementation Strategy is delivered through operational level decision-making.

Access management plan -- In general usage, a plan that shows how and where, for a particular area, access will be provided or limited. Within the context of Forest Practices Code usage, an access management plan is an operational plan that shows how and where road construction, modification and deactivation will be carried out for areas not covered by forest development plans to protect, or mitigate impacts on known resources or sensitive locations, while maximizing the efficiency of resource development

Adaptive resource management -- An approach to managing uncertainty that emphasizes learning by trial. Management policies and practices are adopted, based on best available information, and are monitored to assess effects. Adaptations to those policies and practices are made periodically, on the basis of monitoring and research information.

Agroforestry -- Management (including harvesting) of non-fibre forest resources such as mushrooms, berries, floral cuttings.

Allowable annual cut (AAC) -- The permitted rate of timber harvest from a specified area of land. The chief forester sets AACs for timber supply areas and tree farm licenses in accordance with Section 7 and/or Section 170 of the Forest Act. The district manager sets AACs for woodlot licenses. May also refer to a portion of the total AAC for the management unit (e.g., TSA) partitioned to a single harvesting agreement (i.e., forest license, timber sale license).

Animal unit month -- The amount of forage required to feed a mature one thousand pound cow with or without unweaned calf at her side, or equivalent (one two-year-old horse or five deer) for one month. Grazing stock rates are often expressed as AUMs per hectare or hectares per AUM. Grazing tenures for ranch operations are issued on the basis of AUMs.

Archaeological assessments -- Assessments based on fieldwork and ethnography research of the location, significance and sensitivity of archaeological resources in a given area. Such assessments may be undertaken at an overview or site level. Archaeological impact assessments are undertaken to identify the potential risk to archeological resources from a specific proposed resource development, and to identify the means to mitigate impacts on those resources.

Backcountry tourism -- Commercial tourism activities that are conducted in relatively remote areas of the region, and which are reliant upon access to, and maintenance of, the region's natural amenities (e.g., scenic viewscapes, wildlife populations, solitude, water quality, etc.)

BC Skills Now -- A provincial program designed to provide British Columbia workers with the skills necessary to successfully secure new employment opportunities.

BC 21 program -- A provincial program to invest in regional and community infrastructure and services.

Biodiversity -- The diversity of plants, animals and other living organisms in all their forms and levels of organization, including genes, species and ecosystems and the evolutionary and functional processes that link them.

Biodiversity emphasis -- Pursuant to the FPC Biodiversity Guidebook, the relative emphasis that is placed on the maintenance of biodiversity for a particular area (normally a landscape unit), mainly through the application of resource management practices to retain old seral vegetation and provide connectivity linkages within and between ecosystems. The FPC Biodiversity Guidebook identifies three biodiversity emphasis levels -- high, intermediate and low -- and assigns recommended management criteria to each level. The KBLUP assigns biodiversity emphasis levels to all Crown lands in the region.

Blue listed species -- Sensitive or vulnerable species, as identified by the Ministry of Environment, Lands and Parks. Blue listed species are considered to be vulnerable and “at risk”, but not endangered or threatened. Populations of these species may not be declining but their habitat or other requirements are such that they are sensitive to disturbance. The blue list also includes species that are generally suspected of being vulnerable, but for which information is too limited to allow designation in another category.

Canada / B.C. infrastructure program -- A program established under a federal - provincial agreement to invest in regional and community infrastructure projects such as highways.

Capability (land) -- The natural biological and physical ability of an area of land to support a particular management activity or use. (e.g., soil capability for agriculture; habitat capability for waterfowl). Capability depends upon site conditions such as climate, slope, exposure, landform, soils and geology.

Coarse woody debris -- Sound and rotting logs and stumps that have the potential to provide habitat for fungi, plants, animals and insects and their predators, and that provide a source of nutrients for soil development.

Columbia river downstream benefits -- The funds flowing to the province and the Kootenay region as a result of renegotiation of the 1964 Columbia River Treaty. The funds allocated for investment into the Kootenay region are managed by the Columbia River Trust.

Commission on Resources and Environment (CORE) -- An independent organization created by the British Columbia government whose mandate (as defined in the *Commissioner on Resources and Environment Act*) was to “develop for public and government consideration a British Columbia-wide strategy for land use and related resource and environmental management”. CORE sponsored East Kootenay and West Kootenay-Boundary regional planning processes between 1992 and 1994.

Community watershed -- Defined in the *Forest Practices Code of British Columbia Act*, section 41(8) as:

- a) the drainage area above the most downstream point of diversion on a stream for a water use that is for human consumption and that is licensed under the *Water Act* for
 - a waterworks purpose, or
 - a domestic purpose if the license is held by or is subject to the control of a water users' community incorporated under the *Water Act*if the drainage area is not more than 500 square kilometres and the water license was issued before June 15, 1995 or,
- b) an area that is designated as a community watershed under subsection (10).

Sub-section 10 states that the regional manager may designate an area as a community watershed if:

- a) in the opinion of the regional manager and a designated environment official it should be designated as a community watershed,
- b) the area is all or part of a drainage area above the most downstream point of diversion for a water use that is for human consumption and that is licensed under the *Water Act* for a domestic purpose or a waterworks purpose, and
- c) the area is not an area referred to in subsection (8)(a).

Connectivity corridors -- Land and water areas with characteristics that make them suitable for providing biodiversity linkages among late successional ecosystems. Maintenance of connectivity corridors is considered important to long term biodiversity health through the provision of opportunities for genetic, species and ecosystem movement over time.

Consensus seeking planning -- Multi-stakeholder planning processes that seek to produce a consensus on land use and natural resource management among the planning participants. A consensus is a general agreement on a package of provisions, even if there is not complete concurrence on each aspect.

Consultation (public) -- Democratic activities undertaken to identify the viewpoints, preferences and priorities of the public with respect to particular issues or initiatives, with a view to integrating the public's suggestions into decisions as a means of making the decisions more informed, sound and stable. Public consultation methods are many, ranging along a continuum of increasing interaction, level of commitment by the parties, cost, time and influence. The consultation mechanisms that are employed in any given situation are normally based on an assessment of the issue-specific circumstances, and an articulation of the particular objectives behind the consultation initiative.

Desired plant community -- A plant community that produces the kind, proportion and amount of vegetation necessary for meeting the land use plan requirements or ecological site objectives. The desired plant community must be consistent with the site's capability to produce the desired vegetation through management, land treatment or a combination of the two.

Domestic watersheds -- Watersheds which are licensed for human consumption but not designated as "community watersheds" -- see above.

Ecosystem -- A functional unit consisting of all the living organisms in a given area, and all the non-living physical and chemical factors of their environment, linked together through nutrient cycling and energy flow. An ecosystem can be of any size -- a log, pond, field, forest or the earth's biosphere -- but it always functions as a whole unit. Ecosystems are commonly described according to the major type of vegetation, for example, forest ecosystem or grassland ecosystem.

Ecosystem-based management -- An approach to land and resource planning and management that emphasizes the recognition and maintenance of ecosystem function and structure.

Enhanced resource development zone -- ERDZ (Coal) -- a land use designation category encompassing areas of known coal reserves and existing coal mining and related activities. The Coal ERDZ signifies an assurance of long-term access to the subject lands for coal mining, exploration and development, contributing to investor confidence and general coal industry viability in the region.

Enhanced resource development zone -- ERDZ (Timber) -- a land use designation category encompassing lands with suitability for timber management activities, and upon which relatively intensive timber management investments and practices are appropriate.

Environmental assessment -- A process, initiated under authority of the provincial *Environmental Assessment Act*, to identify and evaluate the environmental (and typically also the social and economic) effects of a proposed development (e.g., mineral, energy, industrial or commercial development) and to identify ways to mitigate potentially negative effects of the development, as a basis for a government decision on whether or not and how the proposed development should proceed..

Environmental supply review -- a periodic assessment of the quantity, distribution and overall health of the region's environmental resources, with a view to adaptively using the assessment information to amend land use plans and resource management policies and procedures, in pursuit of the overall goal to conserve the health of the region's ecosystems.

Forest ecosystem network (FEN) -- An area of land or water that serves to maintain or restore the natural connectivity within the components of an ecosystem, and between ecosystems.

Forest land reserve -- Land designated under the *Forest Land Reserve Act*. This includes private land within a tree farm license and private land classed as managed forest land under the *Assessment Act*, as well as designated Crown land in the provincial forest. Removal of land from the reserve is restricted, as is the use and subdivision of the land. The purpose of the reserve is to maintain the commercial working forest of British Columbia.

Forest practices code (FPC) -- The legislation (including the *Forest Practices Code of British Columbia Act* and associated regulations), standards, and guidebooks that govern forest practices in British Columbia. Forest practices include timber harvesting, road construction/maintenance/use/deactivation, silviculture treatments, botanical forest product collecting, grazing, hay cutting, fire use/control/suppression, etc.

Forest Renewal B.C. -- A crown corporation that is responsible for managing the provincial Forest Renewal Plan investments. The Forest Renewal Plan is a long-term plan for investment in BC's forests, designed to enhance the productive capacity and value of forest lands and resources, create jobs, provide training for forest workers and strengthen forest dependent communities.

Frontcountry tourism -- Commercial tourism products that are offered in communities and along main travel corridors, such as golfing, accommodation and campgrounds.

Guidebooks -- One of the four main components of the Forest Practices Code (The others are the *Forest Practices Code of British Columbia Act*, the regulations and the standards). The guidebooks support the legislation, regulations and standards but are not part of the legislation. These "how-to" guides detail the Code's recommended procedures, processes and results. They give information on how to make site-specific interpretations and modifications to the requirements identified by the Code. The guides become legally enforceable when the specifications and procedures recommended by the guidebooks are incorporated into plans, prescriptions and tenure contracts.

Guideline -- A preferred or advisable course of action respecting land and resource management. Guidelines imply a degree of flexibility, based on administrative judgment or feasibility to apply the guideline and are consequently not normally enforceable through legal means. (The KBLUP identifies a series of resource management guidelines which, when used in combination with resource value maps, provide geographically specific management direction for individual resource values).

Grazing enhancement fund -- An allocation of provincial funds dedicated to enhanced development and management of grazing resources.

Higher level plan -- As defined under the *Forest Practices Code of British Columbia Act*,

- a) a plan formulated pursuant to section 4(c) of the *Ministry of Forests Act* and designated as a higher level plan by the district manager in accordance with direction from the chief forester,
- b) a management plan designated as a higher level plan by the chief forester for tree farm licenses and by the regional manager for other agreements under the *Forest Act*,
- c) an objective for a resource management zone,
- d) an objective for a landscape unit or sensitive area,
- e) an objective for a recreation site, recreation trail or interpretive forest site, and
- f) a plan or agreement declared to be a higher level plan by:
 - the ministers, or
 - the Lieutenant Governor in Council under this or any other Act.

Higher level plans supply guidance and direction for operational plans. Operational plans are required to be consistent with higher level plans that are in effect for the geographic area covered by the operational plan.

Identified wildlife -- Defined in the *Forest Practices Code of British Columbia Act*, Operational Planning Regulation, as those species at risk that the Deputy Minister of Environment, Lands and Parks, or a person authorized by that deputy minister, and the chief forester, agree will be managed through a higher level plan, wildlife habitat area, or general wildlife measure.

Ingrowth -- Vegetative growth occurring in grassland ecosystems (natural disturbance type 4) due to human suppression of naturally occurring fires.

Integrated resource management -- A holistic resource management philosophy and approach where the underlying intent is to share and coordinate among a broad range of values and interests when conceiving, designing and implementing land and resource policies, programs, plans or projects.

Integrated resource management zone (IRMZ) -- a land use designation category within which the primary objective is to balance and optimize environmental, economic and social benefits from the resource values within the zone.

Key alpine habitats -- Whitebark and Limber pine stands, sub-alpine riparian shrublands, alpine meadow complexes and grassland ecotones, avalanche tracks, watershed headwater areas and basin ecosystems and other high elevation ecosystems commonly associated with the following principle environmental characteristics:

- short lapse rate (impact on the length and warmth of the growing season, phenological window)
- low temperature
- high radiation receipts
- azonal soils
- high gradients.

Kootenay Inter-Agency Management Committee (IAMC) -- The interagency committee of senior land and resource management officials in the Kootenay region. The committee is responsible for integrating and coordinating all land and resource planning and protected areas work in the region and for setting regional planning priorities.

Kootenay regional advisory group (KRAG) -- A multi-stakeholder committee with a mandate to provide advice to the provincial government on regional and community economic development and transition in the Kootenay region.

Land use coordination office (LUCO) -- The provincial government office established to coordinate the administration of inter-agency land use planning, advise government on land use policy, and to coordinate the management of land and natural resource inventory programs for the province.

Landscape level planning -- Planning that's purpose is to develop resource management objectives and strategies for resource management in a particular landscape unit or a grouping of landscape units.

Landscape unit -- A planning area established under the *Forest Practices Code of British Columbia Act* by the district manager, up to 100,000 hectares in size, based on topographic or geographic features such as a watershed or a grouping of watersheds.

Land use designation category -- A category of land use employed in a land use plan to describe and communicate an intended land or resource use direction for the lands covered by the designation category. Land use designations in strategic land use planning may indicate a priority or dominant land use, as well as subdominant uses.

Lower level plan -- In the hierarchy / continuum of land use planning levels, ranging from regional to site planning, a lower level plan is a plan that focuses on greater management detail than the plan “above it”, from which it receives guidance and management direction.

Management direction statement -- A summary statement indicating interim management direction for a protected area, pending the eventual development of a park master plan.

Mine reclamation -- the rehabilitation of the land to a condition equal to or better than existed before mining, on a property-wide basis. It is based on the premise that mining is a short-term use of the land.

Mitigating strategies -- In the context of land/resource management, those actions or practices aimed at improving compatibility between land uses. Mitigating strategies include efforts to avoid, minimize, rectify, reduce or compensate for the impact of one land use on another. In the context of socio-economic impact mitigation, those actions and initiatives, taken over the short, medium and long term, to reduce or minimize impacts and disruptions to communities and residents that are potentially associated with sudden change to the economic base of those communities.

Natural environment setting -- A classification level in the recreation opportunity classification scheme, within which the management intent is to minimize the roaded character of the area. These areas are small and may have roads into the area, but not through the area. Landscape alterations are minimal. These areas provide a reasonable degree of isolation from the sights and sounds of motorized activity in a naturally appearing setting.

Natural disturbance types -- A term used in the FPC biodiversity guidebook to characterize areas with different natural disturbance regimes. Five natural disturbance types are recognized as occurring in B.C.:

- NDT1 - Ecosystems with rare stand-initiating events
- NDT2 - Ecosystems with infrequent stand-initiating events
- NDT3 - Ecosystems with frequent stand-initiating events
- NDT4 - Ecosystems with frequent stand-maintaining fires
- NDT5 - Alpine tundra and sub-alpine parkland ecosystems.

Official community plan -- A land use plan that is developed and approved for a municipality or regional district according to the requirements of the *Municipal Act*.

Objective -- A statement of a desired condition respecting lands, resources or communities in a planning area. Objectives may be described broadly which apply across an entire region, or for particular geographic areas.

Old growth management area -- Defined in the *Forest Practices Code of British Columbia Act*, Operational Planning Regulation, as an area established under a higher level plan which contains or is managed to contain structural old growth attributes (such as maintenance of large

trees, variation in tree size/spacing, accumulation of large dead standing and fallen trees, multiple canopy levels, elements of decay, etc.)

Operability line -- The line (usually an elevation) beyond which timber harvesting becomes uneconomic and/or technically unfeasible due to hauling distance, steep slopes, soil instability, timber quality, environmental concerns, etc. Operability can change over time as a function of changing harvesting technologies and economics.

Operational plan -- A resource management plan that contains detail on the logistics for resource use / development in a particular area. Methods, schedules and responsibilities for accessing, harvesting, renewing and protecting resources are set out to enable site-specific operations to proceed. As described in the *Forest Practices Code of British Columbia Act*, operational plans include forest development plans, logging plans, access management plans, range use plans, silviculture prescriptions, stand management prescriptions and five year silviculture plans.

Park master plan -- A comprehensive plan that describes the future management direction for a protected area.

Patch size -- A stand of similar-aged forest that differs in age from adjacent patches by more than 20 years. When using the term patch in designing landscape patterns, it refers to the size of either natural disturbance openings which led to even-aged forests, or those openings created by cutblocks.

Polygon -- A unit of land depicted on a map that contains an area of similar characteristics.

Potential natural community -- The biotic community that would become established on a site if all successional sequences were completed under present environmental conditions without interference by humans.

Protected area -- A designation for areas of land and water set aside to protect natural heritage, cultural heritage or recreational values (may include national park, provincial park or ecological reserve designation).

Protected area strategy (PAS) -- The provincial strategy to develop and expand British Columbia's protected area system to encompass 12% of the provincial land base by the year 2000.

Provincially significant -- An interpretive rating, in a rating hierarchy, applied to a particular resource values to indicate their relative uniqueness or scarcity. Provincially significant values are unique and important within a provincial context, given their rarity or scarcity, or the economic, social or environmental contribution that they make to the province (as compared to regionally or locally significant resource values). Strategic land use planning is normally limited to the consideration of provincially or regionally significant resource values.

Rangeland ecosystems -- Natural grasslands, open forests, seral shrub grassland, alpine grassland, seeded rangeland and early seral cutblocks.

Rangeland management regimes -- includes activities to manipulate the levels of range utilization, timing and duration of grazing, distribution and stocking rates. Management regimes

may apply to both livestock and, to a lesser degree, wildlife species. In the case of livestock, management techniques include the implementation of modification of grazing systems, the construction of livestock management facilities such as fences, gates, cattleguards and stock trails, proper salt placement, development of stockwater facilities, and range riding.

Rare, threatened or endangered species -- see “blue-listed” and “red-listed” species.

Recreation opportunity spectrum (ROS) -- A recreational classification system that is used to classify areas in terms of the type of recreational experience that a recreation user would have in that area, based on an assessment of the area’s remoteness, size, evidence of humans, social setting, and setting characterization. The six ROS classes are natural, primitive, semi-primitive non-motorized, semi-primitive motorized, roaded resource land and rural.

Red listed species -- Threatened or endangered species identified by the Ministry of Lands, Parks and Housing. Plants or animals named on the red list are either extirpated, endangered or threatened, or are being considered for such status. Any indigenous species or sub-species threatened with imminent extinction or extirpation throughout all or a significant portion of its range in B.C. is endangered. Threatened indigenous species or sub-species are those that are likely to become endangered in B.C. if conditions are not altered.

Regional biodiversity benchmark -- A statement of the desired condition and desired spatial extent, in the Kootenay region, of regionally significant fish streams, caribou species and habitats, ungulate winter range, representative ecosystems and regional connectivity and grizzly bears - as primary indicators of regional biodiversity health. The benchmark will be used to monitor overall regional biodiversity levels in the region over time.

Regional growth strategy -- A strategic plan related to human settlement, initiated under authority of the provincial *Growth Strategies Act*, for a regional district or group of regional districts, to identify a regional vision that commits affected municipalities and regional districts to a course of action to meet common social, economic and environmental objectives. A regional growth strategy must cover a period of at least 20 years and it must include population and employment projections and actions to meet the needs of future residents in relation to housing, transportation, services, parks/natural areas and economic development.

Regional objectives and strategies -- Statements of land use and natural resource management intent (objectives), and the means of attaining that intent (strategies), that apply to resource values and sectors throughout the entire region.

Regionally significant -- An interpretive rating, in a rating hierarchy, that is applied to particular resource values to indicate their relative uniqueness or scarcity. Regionally significant values are unique and important within a regional context, given their rarity or scarcity, or the economic, social or environmental contribution that they make to the region (as compared to provincially or locally significant resource values). Strategic land use planning is normally limited to the consideration of provincially or regionally significant values.

Resource management guidelines -- The statements contained in Appendix 2 of the KBLUP that describe the specific resource management practices, standards and procedures that apply within the planning area.

Revelstoke Minister's Advisory Committee -- A multi-sectoral group comprised of representatives from the Revelstoke area with a direct interest in land use and natural resources management. This committee was appointed by the Minister of Forests in 1995 to advise on the development of resource management and socio-economic objectives and strategies for the Revelstoke TSA.

Riparian reserve -- A geographic zone defined in the *Forest Practices Code of British Columbia Act*, Operational Planning Regulation, as that portion, if any, of the riparian management area or lakeshore management area located adjacent to a stream, wetland or lake of a width determined in accordance with Part 10 of the Regulation.

Roaded resource lands -- A classification level in the recreation opportunity classification scheme, within which the management intent is to provide opportunities for dispersed and facility oriented recreation. These lands are accessed by better than primitive roads and are suitable for most conventional 2 wheel drive vehicles. These lands have been altered by man and the alterations are visible on the landscape.

Semi-primitive motorized recreation -- A classification level in the recreation opportunity classification scheme, within which the management intent is to provide for dispersed motorized recreation. These areas are accessed by primitive roads or trails, suitable for high clearance 4 wheel drive vehicles, motorcycles, ATVs and snowmobiles.

Semi-primitive non-motorized recreation -- A classification level in the recreation opportunity classification scheme, within which the management intent is to maintain the unroaded character of the area and to provide opportunities for dispersed non-motorized recreation.

Sensitive Areas -- Small areas established under the *Forest Practices Code of British Columbia Act* by MOF district managers to manage or conserve unique or locally significant resource values.

Settlement land uses -- Land uses authorized under authority of the *Land Act*, including, but not limited to, land used for the following purposes: residential, institutional/community, small parcel intensive agriculture, industrial, quarries, commercial, communications facilities, utilities, community park facilities and extension to existing private land holdings. Settlement uses are predominantly located within and/or adjacent to existing municipal boundaries; in areas outside of municipal boundaries that adjoin or are proximate to the existing mosaic of private land; in areas within linear settlement corridors that reflect the past pattern of land settlement and development; or in resort development areas that are focused primarily on tourism and supporting accommodation and infrastructure facilities.

Scenic areas -- Defined in the *Forest Practices Code of British Columbia Act*, Operational Planning Regulation, as any visually sensitive area or scenic landscape identified through a visual landscape inventory or planning process carried out or approved by the district manager.

Shared decision-making -- An approach to public participation in decision-making (especially land use planning) in which, on a certain set of issues for a defined period of time, those with authority to make a decision and those affected by that decision are empowered jointly to seek an outcome that accommodates the interests of all concerned.

Silviculture system -- A planned program of treatments throughout the life of the stand to achieve stand structural objectives based in integrated resource management goals. A silvicultural system includes harvesting, regeneration and stand-tending methods, covering the entire length of a rotation or cutting cycle.

Small business bid proposal -- A program through which the Ministry of Forests sells Crown timber competitively, on the basis of solicited bids, to individuals and corporations registered in the program. Proposals may be evaluated in terms of stumpage bid, as well as other criteria including employment creation.

Special resource management zone (SMRZ) -- the land use designation category applied to areas with high concentrations of regionally significant and sensitive resource values, including critical fish and wildlife habitat, under-represented ecosystems, important viewscapes, sensitive recreation areas and cultural heritage features. Areas designated as SRMZ communicate the general resource management priority to maintain the integrity of the numerous special and sensitive values that are known to exist in those areas.

Strategic land use plan -- The product of a land use planning process at the regional, sub-regional and, in some cases, at the local level, which provides land and resource allocation and management direction. Strategic land use plans involve the identification of resource management zones, objectives and strategies. They provide direction and guidance to field level policy and program development, in day-to-day administrative decision-making, and to future lower-level planning processes.

Strategy -- A means of achieving an objective. Strategies may be general or specific in nature, and may describe a resource management standard, guideline, policy or procedure.

Sub-unit -- A geographic area within a land use designation zone for which specific land and resource management direction is provided. The Kootenay region was subdivided into ?? separate sub-units, as a basis for describing geographically-specific land and resource management direction.

Suitability (land) -- The degree to which a particular use or activity is considered appropriate on a given area of land, as interpreted from an assessment of a variety of factors, including biophysical capability of the land and socio-economic considerations.

Support zones -- areas adjacent to protected areas, parks, wildlife habitat areas, sensitive areas or critical habitats which buffer a marked change in resource management emphasis enabling a gradual impact to environmental values. This is accomplished with strategic biodiversity emphasis allocation, guideline application by environmental value, access management, or connectivity management through the Higher Level Plans Policy and Procedures document.

Target -- The quantification of a land use / resource management objective. A target might apply to the entire region (e.g., a regional short term timber availability target), or it might pertain to a particular geographic area (e.g., proportion of a sub-unit to be managed at 'high emphasis biodiversity' level). Resource management targets indicate a desirable or plausible resource production output, allocation amount, or a timeline within which an action is intended to be initiated or completed. Resource management targets provide directive guidance to resource managers in plan interpretation and implementation, but are *not* binding on the authority of

statutory decision-makers to exercise their discretion in making resource management and administrative decisions for which they are legally responsible.

Total resource plan -- An integrated resource management plan for an individual watershed or landscape unit that specifies the 'total' long-term development sequence / regime for that watershed or unit.

Tree farm license (TFL) -- An agreement entered into under Part 3, Division 5 of the Forest Act which grants the rights to harvest timber. A TFL has a term of 25 years and requires a management plan providing for the establishment, management and harvesting of timber in a described area (Crown and private land) on a sustained or perpetual yield basis.

Timber supply area (TSA) -- An integrated resource management unit established in accordance with Section 6 of the *Forest Act*. TSAs were originally defined by an established pattern of wood flow from management units to the primary timber-using industries. They are the primary unit for allocable annual cut determination. There are seven TSAs in the Kootenay region.

Utilization standards -- Standards that are prescribed by the Ministry of Forests respecting the size and quality of trees that must be removed from a logging site, and conversely those trees or portions of trees that may be left behind due to marginal small size or-soundness of the wood.

Value-added -- The creation of additional value / income to a resource or product through the further processing, refinement or manufacturing of that resource or product.

Viability -- A statistically or qualitatively generated measure describing a population's persistence or probability to avoid local extirpation as a deterministic environmental variation, and catastrophic genetic drift. Viability is evaluated using three key factors:

- effect of various chance events on population persistence
- time frame used in population planning
- degree of security sought for the population being conserved.

Natural limits to population viability are:

- demographic uncertainty (random events in the survival and reproduction in individuals)
- environmental uncertainty due to random changes in weather, food supply, competitors, predators, parasites, etc.
- natural catastrophes such as floods, fires, droughts
- genetic uncertainty due to random changes in genetic make-up due to founder effect, drift, inbreeding.

Wildlife habitat area -- Defined in the *Forest Practices Code of British Columbia Act*, Operational Planning Regulation, as a mapped area of land that the Deputy Minister of Environment, Lands and Parks, or a person authorized by that deputy minister, and the chief forester, have determined is necessary to meet the habitat requirements of one or more species of identified wildlife.

Wildlife tree -- Defined in the *Forest Practices Code of British Columbia Act*, Operational Planning Regulation, as a tree or group of trees that are identified in an operational plan to provide present or future wildlife habitat. A wildlife tree is a standing live or dead tree with special characteristics that provide valuable habitat for the conservation or enhancement of wildlife (e.g., large diameter and height, current use by wildlife, declining or dead condition, value as a species, or valuable location and relative scarcity).

Woodlot license -- An agreement entered into under Section 41 of the *Forest Act* which grants the rights to harvest timber on a small parcel of Crown and private land (less than 400 hectares on the Coast or 600 hectares in the Interior).

Kootenay/Boundary Land Use Plan

Implementation Strategy

Appendix 4

Land and Resource Management Direction

within the

Golden Timber Supply Area

June 1997

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Appendix 4

Golden Timber Supply Area Land and Resource Management Direction

1.0 Purpose

This appendix identifies geographically specific land and resource management objectives and strategies for the Golden Timber Supply Area. This site specific management direction covers issues which are:

- not explicitly dealt with through the regional management objectives and strategies (Chapter 2) or the resource management guidelines and accompanying maps (Chapter 3) because they are of local significance, or:
- local interpretations which assist the implementation of the regional management objectives and strategies (Chapter 2) or the resource management guidelines and accompanying maps (Chapter 3).

2.0 Organization

The material in this appendix is organized and presented according to the KBLUP's land use designation categories. Each of the Resource Management Zones is identified by a reference number. For example, the Resource Management Zones identified as G-S01 indicates that the Resource Management Zone is in the Golden Timber Supply Area (G), is within the special resource management area designation category (S), and is tagged with the identifier number 01.

The site specific management objectives and strategies included in this appendix are listed under headings which correspond to those used in the regional objectives and strategies (Chapter 2). These site specific management objectives and strategies are also tagged to specific landscape units. The Forest Practices Code requires definition of landscape units, including boundaries and management objectives. A landscape unit is a geographic area of land which encompasses a single, or group of, watersheds. Recommended landscape unit boundaries for the Kootenay/Boundary region are identified through section 3.2 of Chapter 3. These areas are generally subunits of Resource Management zones and, in some cases, exist in more than one Zone. The appropriate landscape units are identified in this appendix to assist in translating the management direction into landscape level planning. For further discussion on landscape level planning, please see Chapter 6, section 6.3.

Note: Changes, additions or deletions to the resource objectives and strategies outlined in this Appendix may result from further work at either the regional and/or landscape level. Such changes will be undertaken in a manner consistent with the mechanism for Plan Amendment (Chapter 6, section 6.8) or through subsequent landscape level planning (Chapter 6, section 6.3).

3.0 Resource Management Zone Objectives and Strategies

Upper Wood River G-S01

Objective	Strategy	Landscape Units
<p>Access Management</p> <p>1. Ensure the range of objectives and strategies are integrated throughout the unit, particularly as they relate to access for proposed development.</p> <p>2. Manage for remote recreation and conservation values, while allowing resource extraction to proceed.</p>	<p>1.1 All proposals for new road development or expansions will be evaluated through either:</p> <ul style="list-style-type: none"> • an enhanced referral process as described in the Access Management Guidelines, Chapter 3, section 3.12, or • special measures which, because of imminent development, require immediate attention. <p>2.2 Implement road closures and prohibit motorized access for use other than approved industrial activity.</p> <p>2.3 Minimize duration of each timber harvest entry, maximize the time between entries and minimize the number of entries.</p>	
<p>Recreation</p> <p>1. Maintain a range of recreation opportunities towards the semi primitive end of the Recreation Opportunity Spectrum.</p> <p>2. Maintain the integrity of the Athabasca Pass Heritage Trail</p>	<p>1.1 Manage upland areas (inoperable for forestry) for semi primitive non motorized, within the operable forest, manage for semi primitive motorized with road closure upon the conclusion of each harvesting entry.</p> <p>2.1 Manage identifiable portions of the Athabasca Pass Trail, as a Heritage Trail, consistent with the interagency agreement for Heritage Trails. This SRMZ is a priority for lower level planning which will include further measures for trail management.</p> <p>2.2 Minimize road development in the vicinity of the Athabasca Pass Trail.</p> <p>2.3 Apply Backcountry Management Guidelines for Heritage Trails (Chapter 3, section 3.9) with the following addition. Visuals: Logging may be discernible, but not clearly evident from the trail (this does not include broad viewpoints). Class 2, (Chapter 3, section 3.9) Visual Management Guidelines will be applied from established broad viewpoints.</p>	<p>G-1</p> <p>G-1</p> <p>G-1</p>

Objective	Strategy	Landscape Units
<p>General Biodiversity</p> <p>1. Maintain the regional connectivity corridor between Jasper National Park and the Columbia River system, to contribute to ecosystem representation (ESSFwc2), to serve as habitat linkage for the seasonal migration of grizzly bears and mountain caribou, and to support Cummins Park.</p>	<p>1.1 Apply the connectivity guidelines within the regional connectivity corridor as indicated in Chapter 3, section 3.3.</p>	
<p>Ungulates</p> <p>1. Maintain the abundance of moose within the sustainable carrying capacity of their habitat.</p>	<p>1.1 Maintain the priority summer habitat within this unit through application the biodiversity emphasis under the FPC.</p>	
<p>Fisheries</p> <p>1. Maintain wild fish stocks and habitat for Kokanee.</p>	<p>1.1 In establishing priorities for watershed assessments, consideration should be given to the lower Wood River.</p>	

Windy Creek, Mt. Sir Sandford and the Adamants G-S02

Objective	Strategy	Landscape Units
<p>Access Management</p> <p>1. Ensure the range of objectives and strategies are integrated within the Windy and Austerity Creek areas, particularly as they relate to access for proposed development.</p> <p>2. Manage for remote recreation and conservation values, while allowing resource extraction to proceed.</p>	<p>1.1 All proposals for new road development or expansions will be evaluated through either:</p> <ul style="list-style-type: none"> • an enhanced referral process as described in the Access Management Guidelines, Chapter 3, section 3.12, or • special measures which, because of imminent development, require immediate attention. <p>2.1 Implement road closures and prohibit motorized access for use other than approved industrial activity.</p> <p>2.2 Minimize duration of each timber harvest entry, maximize the time between entries and minimize the number of entries.</p>	
<p>Recreation</p> <p>1. Maintain a range of recreation opportunities towards the semi primitive end of the Recreation Opportunity Spectrum.</p>	<p>1.1 Manage upland areas (inoperable for forestry) for semi primitive non motorized. Within the operable forest, manage for semi primitive motorized with road closure upon the conclusion of each harvesting entry.</p>	<p>G-12 G-13 G-29</p>
<p>General Biodiversity</p> <p>1. Maintain the regional connectivity corridor between the East and West Kootenays via a low elevation pass at the headwaters of Windy Creek into the Revelstoke District to contribute to ecosystem representation (ESSFwc2 and ICHwk1) and to serve as habitat linkage for the seasonal migration of grizzly bears and caribou.</p> <p>2. Retain attributes for old growth dependent species and fur bearers.</p>	<p>1.1 Apply the connectivity guidelines within the regional connectivity corridor as indicated in Chapter 3, section 3.3.</p> <p>2.1 In establishing priorities for Old Growth Management Areas, consideration should be given to Cedar-Hemlock and Englemann Spruce Sub Alpine Fir in the Windy and Austerity drainages.</p>	
<p>Ungulates</p> <p>1. Maintain the abundance of moose within the sustainable carrying capacity of their habitat.</p>	<p>1.1 Maintain the priority summer habitat within this unit through application of the biodiversity emphasis under the FPC.</p>	

**Esplanade Range
G-S03**

Objective	Strategy	Landscape Units
<p>Access Management</p> <p>1. Manage for remote recreation and conservation values, while allowing resource extraction to proceed.</p>	<p>1.2 Implement road closures and prohibit motorized access for use other than approved industrial activity.</p> <p>1.3 Minimize duration of each timber harvest entry, maximize the time between entries and minimize the number of entries.</p>	
<p>Recreation</p> <p>1. Maintain a range of recreation opportunities towards the semi primitive end of the Recreation Opportunity Spectrum.</p>	<p>1.1 Manage upland areas (inoperable for forestry) for semi primitive, non motorized recreation.</p>	

**Canyon Creek
G-S04**

Objective	Strategy	Landscape Units
<p>Access Management</p> <p>1. Ensure the range of objectives and strategies are integrated within the Canyon Creek area, particularly as they relate to access for proposed development.</p> <p>2. Manage for remote recreation and conservation values, while allowing resource extraction to proceed.</p>	<p>1.1 All proposals for new road development or expansions will be evaluated through either:</p> <ul style="list-style-type: none"> • an enhanced referral process as described in the Access Management Guidelines, Chapter 3, section 3.12, or • special measures which, because of imminent development, require immediate attention. <p>2.1 Implement road closures and prohibit motorized access for use other than approved industrial activity.</p> <p>2.2 Minimize duration of each timber harvest entry, maximize the time between entries and minimize the number of entries.</p>	
<p>Recreation</p> <p>1. Maintain a range of recreation opportunities towards the semi primitive end of the Recreation Opportunity Spectrum.</p>	<p>1.1 Manage upland areas (inoperable for forestry) for semi primitive non motorized. Within the operable forest, manage for semi primitive motorized with road closure upon the conclusion of each harvesting entry.</p>	G-24
<p>General Biodiversity</p> <p>1. Maintain the regional connectivity corridor between the Columbia River wetlands and the Spillamacheen and Glacier National Park to serve as habitat linkage for the seasonal migration of grizzly bears and mule deer and to support Glacier National Park.</p> <p>2. Retain attributes for old growth dependent species and fur bearers.</p>	<p>1.1 Apply the connectivity guidelines within the regional connectivity corridor as indicated in Chapter 3, section 3.3.</p> <p>2.1 In establishing priorities for Old Growth Management Areas, consideration should be given to the unit.</p>	
<p>Ungulates</p> <p>1. Maintain the abundance of mule and white-tailed deer, elk and Rocky Mountain Goat within the sustainable carrying capacity of their habitat.</p>	<p>1.1 Maintain the priority summer habitat within this unit through application of the biodiversity emphasis under the FPC.</p>	

Objective	Strategy	Landscape Units
<p>Wide Ranging Carnivores</p> <p>1. Maintain sufficient seasonal habitat to retain the existing grizzly bear population.</p>	<p>1.1 Support the Grizzly and Black Bear Study funded by the CBFWCP to define bear population size, movements and mortality within the Columbia Valley east and west of Donald, BC.</p>	

**Moberly Marshes
G-S05**

Objective	Strategy	Landscape Units
<p>Access Management</p> <p>1. Ensure the range of objectives and strategies are integrated throughout the unit, particularly as they relate to access for proposed development.</p>	<p>1.1 Lower level strategic planning to determine specific access requirements and possible restrictions.</p>	
<p>Settlement</p> <p>1. Maintain opportunities for continued transportation and utility uses for existing private land, and to provide a link to areas outside the unit.</p>	<p>1.1 Integrate existing private land transportation and utility requirements in the unit into the management plan for the Columbia Wetlands Wildlife Management Area.</p>	
<p>Recreation</p> <p>1. Maintain a range of recreation opportunities towards the semi primitive non motorized end of the Recreation Opportunity Spectrum.</p>	<p>1.1 Manage river corridor for a natural environment setting.</p> <p>1.2 Lower level strategic planning for recreation to address activity management issues, recreation use levels and use Limits of Acceptable Change methodology.</p>	<p>G-23 G-25</p> <p>G-20</p>
<p>General Biodiversity</p> <p>1. Retain wetland ecological elements and processes, including species richness, distribution and diversity at a moderate risk.</p> <p>2. Maintain the regional connectivity corridor in the Columbia Wetlands to contribute to ecosystem representation (ICHmk1) and to serve as habitat linkage for migrating waterfowl.</p> <p>3. Ensure habitat requirements for red and blue listed and regionally significant species are achieved.</p>	<p>1.1 Implement the Columbia Marshes Wildlife Management Plan.</p> <p>2.1 Apply the connectivity guidelines within the regional connectivity corridor as indicated in Chapter 3, section 3.3.</p> <p>3.1 Address the American Bittern, Western Grebe and Great Blue Heron through application of the appropriate components of the FPC.</p>	
<p>Fisheries</p> <p>1. Maintain wild fish stocks and habitat for existing fish species in the Upper Columbia River.</p>	<p>1.1 Undertake an assessment of fish and fish habitat to develop an appropriate management strategy to ensure sensitive habitats are not negatively impacted.</p> <p>1.2 Conduct basic life history investigations.</p>	

Objective	Strategy	Landscape Units
<p>Air Quality</p> <p>1. Improve air quality in Golden.</p>	<p>1.1 Continue to support and liaise with Golden Air Quality Committee on a regular basis, attend meetings as needed to provide technical support.</p> <p>1.2 Work with the Committee to secure funding for purchase and operation of a TEOM and associated equipment and meteorological (wind speed and direction) equipment to allow real-time access to air quality data and real-time management of air quality.</p> <p>1.3 Develop some community expertise in routine operation and maintenance of TEOM as well as local expertise in evaluation of data and issuance of air quality advisories.</p>	

**Moose Creek
G-S06**

Objective	Strategy	Landscape Units
<p>Access Management</p> <p>1. Ensure the range of objectives and strategies are integrated within the Moose Dainard areas, particularly as they relate to access for proposed development.</p> <p>2. Manage for remote recreation and conservation values, while allowing resource extraction to proceed.</p>	<p>1.1 All proposals for new road development or expansions will be evaluated through either:</p> <ul style="list-style-type: none"> • an enhanced referral process as described in the Access Management Guidelines, Chapter 3, section 3.12, or • special measures which, because of imminent development, require immediate attention. <p>2.1 Implement road closures and prohibit motorized access for use other than approved industrial activity.</p> <p>2.2 Minimize duration of each timber harvest entry, maximize the time between entries and minimize the number of entries.</p>	
<p>Recreation</p> <p>1. Maintain a range of recreation opportunities towards the semi primitive end of the Recreation Opportunity Spectrum.</p>	<p>1.1 Manage upland areas (inoperable for forestry) for semi primitive non motorized, within the operable forest, manage for semi primitive motorized with road closure upon the conclusion of each harvesting entry.</p>	G-27
<p>General Biodiversity</p> <p>1. Maintain the regional connectivity corridor between Yoho National Park and the valley bottoms of Kootenay and Beaverfoot drainages, to serve as habitat linkage for the seasonal migration of grizzly bears, moose and elk and to support Kootenay and Yoho National Parks.</p> <p>2. Retain attributes for old growth dependent species and fur bearers.</p>	<p>1.1 Apply the connectivity guidelines within the regional connectivity corridor as indicated in Chapter 3, section 3.3.</p> <p>2.1 In establishing priorities for Old Growth Management Areas, consideration should be given to Spruce within the unit.</p>	
<p>Ungulates</p> <p>1. Maintain the abundance of elk and moose within the sustainable carrying capacity of their habitat.</p>	<p>1.1 Maintain the priority summer habitat within this unit through application of the biodiversity emphasis under the FPC.</p>	

Encampment Creek and Wood Arm G-101

Objective	Strategy	Landscape Units
<p>Access Management</p> <p>1. Manage for remote recreation and conservation values, while allowing resource extraction to proceed.</p>	<p>1.1 Implement road closures and prohibit motorized access for use other than approved industrial activity.</p> <p>1.2 Implement barge access restrictions.</p>	
<p>Recreation</p> <p>1. Maintain a range of recreation opportunities towards the semi primitive end of the Recreation Opportunity spectrum.</p>	<p>1.1 Degree and location of motorized road closures to be determined through lower level strategic planning.</p>	
<p>General Biodiversity</p> <p>1. Maintain the regional connectivity corridor between the Columbia Reservoir to the upper Wood River to serve as habitat linkage for the seasonal migration of moose and caribou and to support Cummins Provincial Park.</p>	<p>1.1 Apply the connectivity guidelines within the regional connectivity corridor as indicated in Chapter 3, section 3.3.</p>	
<p>Ungulates</p> <p>1. Maintain the abundance of moose within the sustainable carrying capacity of their habitat.</p>	<p>1.1 Maintain the priority summer habitat within this unit through application of the biodiversity emphasis under the FPC.</p>	
<p>Fisheries</p> <p>1. Maintain wild fish stocks and habitat for Kokanee.</p> <p>2. Maintain wild fish stocks and habitats for existing species in Lake Kinbasket.</p>	<p>1.1 In establishing priorities for watershed assessments, consideration should be given to the Wood River.</p> <p>2.1 Initiate a program to collect the necessary information on fish stocks and habitat.</p> <p>2.2. Monitor the fishery over time to obtain an indication of population status.</p>	

Clemenceau Icefields; Kinbasket, Sullivan and Bush Rivers G-I02

Objective	Strategy	Landscape Units
<p>Access Management</p> <p>1. Manage for remote recreation and conservation values in Ricebrook drainage, while allowing resource extraction to proceed.</p>	<p>1.1 Implement road closures and prohibit motorized access for use other than approved industrial activity.</p> <p>1.2 Minimize duration of each timber harvest entry, maximize the time between entries and minimize the number of entries.</p>	
<p>Recreation</p> <p>1. Maintain a range of recreational opportunities from roaded resource land to semi primitive non motorised.</p>	<p>1.1 Maintain opportunities for backcountry recreation by managing the inoperable forest (especially in the Clemenceau and Columbia Icefields area) for semi primitive non motorized recreation.</p> <p>1.2 Degree and location of motorized road closures to be determined through lower level strategic planning.</p>	<p>G-1 G-5 G-6 G-7 G-10</p>
<p>General Biodiversity</p> <p>1. Maintain the regional connectivity corridor between Banff National Park and the lower elevation of the Bush River, via a low elevation pass at the headwaters of Rice Brook (creating a linkage between SRMZ units G-S01 and G-S02 with Cummins Provincial Park) to serve as habitat linkage for the seasonal migration of grizzly bears and moose and to support Banff National Park.</p> <p>2. Retain attributes for old growth dependent species and fur bearers.</p>	<p>1.1 Apply the connectivity guidelines within the regional connectivity corridor as indicated in Chapter 3, section 3.3.</p> <p>2.1 In establishing priorities for Old Growth Management Areas, consideration should be given to the Interior Cedar and Hemlock zone in the Kinbasket area.</p>	
<p>Ungulates</p> <p>1. Maintain the abundance of elk, moose and Rocky Mountain Goats within the sustainable carrying capacity of their habitat.</p>	<p>1.1 Maintain summer alpine habitat and minimize displacement of ungulates in the Kinbasket and Sullivan drainages by developing an access management plan in accordance with the access management guidelines (Chapter 3, section 3.12).</p>	
<p>Wide Ranging Carnivores</p>		

Objective	Strategy	Landscape Units
1. Maintain sufficient seasonal habitat, particularly with respect to high productivity avalanche slopes, to retain the existing grizzly bear population.	1.1 Implement road closures in Kinbasket drainages and prohibit motorized access for use other than approved industrial activity.	
Fisheries 1. Maintain wild fish stocks and habitat for regionally significant Kokanee spawning and rearing habitat.	1.1 In establishing priorities for watershed assessments, consideration should be given to the Bush River and Sullivan Creek.	

Westside of Kinbasket Lake and Blackwater Ridge G-103

Objective	Strategy	Landscape Units
<p>Recreation</p> <p>1. Maintain a range of recreational opportunities from roaded resource land to semi primitive non motorized.</p>	<p>1.1 A priority for lower level strategic planning will be to determine if/what portions of Bluewater Creek will be managed as a Backcountry River Corridor consistent with the Backcountry Recreation Guidelines (Chapter 3, section 3.9).</p> <p>1.2 Degree and location of motorized road closures to be determined through lower level strategic planning.</p>	<p>G-16</p>
<p>General Biodiversity</p> <p>1. Retain forest ecological elements and processes, including species richness, distribution and diversity.</p> <p>2. Maintain the regional connectivity corridor between the Columbia Reservoir, Windy/Austerity and Gold/Bachelor into Glacier National Park to serve as habitat linkage for the seasonal migration of moose.</p>	<p>1.1 Maintain the Goosegrass Ecological Reserve.</p> <p>2.1 Apply the connectivity guidelines within the regional connectivity corridor as indicated in Chapter 3, section 3.3.</p>	
<p>Fisheries</p> <p>1. Maintain wild fish stocks and habitat for existing fish species in the Upper Columbia River.</p> <p>2. Maintain wild fish stocks and habitats for existing species in Lake Kinbasket.</p>	<p>1.1 Undertake an assessment of fish and fish habitat to develop an appropriate management strategy to ensure sensitive habitats are not negatively impacted.</p> <p>1.2 Conduct basic life history investigations.</p> <p>2.1 Initiate a program to collect the necessary information on fish stocks and habitat.</p> <p>2.2 Monitor the fishery over time to obtain an indication of population status.</p>	

**Bachelor Creek, Gold River, Ventego Creek
G-I04**

Objective	Strategy	Landscape Units
<p>Recreation</p> <p>1 Maintain a range of recreation opportunities towards the semi primitive end of the Recreation Opportunity Spectrum.</p>	<p>1.1 Degree and location of motorized road closures to be determined through lower level strategic planning.</p>	
<p>General Biodiversity</p> <p>1. Maintain the regional connectivity corridor within the Bachelor system between the Columbia Reservoir and into the Revelstoke District via a low elevation pass at the headwaters of Gold Creek, to serve as habitat linkage for the seasonal migration of mountain caribou and to support Glacier National Park.</p> <p>2. Retain attributes for old growth dependent species and fur bearers.</p>	<p>1.1 Apply the connectivity guidelines within the regional connectivity corridor as indicated in Chapter 3, section 3.3.</p> <p>2.1 In establishing priorities for Old Growth Management Areas, consideration should be given to the Interior Cedar-Hemlock and Engelmann Spruce Sub-Alpine Fir zones in Gold and Palmer Creeks.</p>	
<p>Ungulates</p> <p>1. Maintain the abundance of moose within the sustainable carrying capacity of their habitat.</p>	<p>1.1 Maintain the priority summer habitat within the Bachelor drainage through application of the biodiversity emphasis under the FPC.</p>	
<p>Fisheries</p> <p>1. Maintain riparian wetland values in the upper Bachelor drainage.</p>	<p>1.1 In establishing priorities for watershed assessments, consideration should be given to the Bachelor drainage..</p>	

Valentciennes, Upper Bluewater and Blaeberry G-105

Objective	Strategy	Landscape Units
<p>Access Management</p> <p>1. Manage for remote recreation and conservation values, while allowing resource extraction to proceed.</p>	<p>1.2 Maintain existing access closure in Bluewater drainage in absence of lower level plan.</p>	
<p>Recreation</p> <p>1. Maintain a range of recreational opportunities from roaded resource land to semi primitive non motorized.</p> <p>2. Maintain the integrity of the Howse Pass Heritage trail.</p>	<p>1.1 A priority for lower level strategic planning will be to determine if/what portions of the Blaeberry River and Bluewater Creek will be managed as Backcountry River Corridors (Chapter 3, section 3.9).</p> <p>2.1 Manage identifiable portions of the Howse Pass Trail, from Howse Pass to Cairnes Creek, as a Heritage Trail, consistent with the interagency agreement for Heritage Trails (Chapter 3, section 3.9).</p> <p>2.2 Degree and location of motorized road closures to be determined through lower level strategic planning.</p> <p>2.3 Location and management of the trail corridor downstream of Cairnes Creek to be defined in lower level strategic planning.</p>	<p>G-19 G-21</p>
<p>General Biodiversity</p> <p>1. Retain forest ecological elements and processes, including species richness, distribution and diversity at a moderate risk.</p> <p>2. Maintain the regional connectivity corridor between the Columbia system and Alberta via Howse Pass to serve as habitat linkage for the seasonal migration of ungulates and grizzly bears and to support Yoho National Park.</p> <p>3. Retain attributes for old growth dependent species and fur bearers.</p>	<p>1.1 Complete the ongoing project to develop a biophysical classification scheme appropriate for avalanche paths funded by the CBFWCP.</p> <p>2.1 Apply the connectivity guidelines within the regional connectivity corridor as indicated in Chapter 3, section 3.3.</p> <p>3.1 In establishing priorities for Old Growth Management Areas, consideration should be given to the Interior Cedar/Hemlock zone in the Bluewater drainage.</p>	
<p>Fisheries</p> <p>1. Maintain riparian wetland values in the Marl, Blackwater and Succer Creek areas.</p>	<p>1.1 In establishing priorities for watershed assessments, consideration should be given to the Marl, Blackwater and Succer Creek areas.</p>	

**Dogtooth Range, Westbench
G-I06**

Objective	Strategy	Landscape Units
<p>Agriculture</p> <p>1. Maintain opportunities for increased or improved agriculture activity.</p>	<p>1.1 Potential agricultural opportunities, particularly within the Dogtooth polygon, identified by individuals through the Range Use Plan process under the FPC or proponent application to the appropriate agencies, will be reviewed and evaluated by an inter-agency government process which will involve affected parties and the public.</p>	<p>G-23</p>
<p>Commercial Tourism</p> <p>1. Maintain and enhance opportunities for resorts and commercial backcountry recreation.</p>	<p>1.1 Provide Crown land, as necessary, for expansion of the Westbench Recreation area. This action will be subject to consideration of conservation values, municipal and regional planning, and the provincial land use charter and goals.</p>	
<p>Recreation</p> <p>1. Maintain a range of recreational opportunities from roaded resource land to semi primitive non motorized.</p>	<p>1.1 A priority for lower level strategic planning will be to define commercial use, use levels, tenure allocations and recreation infrastructure.</p> <p>1.2 Degree and location of motorized road closures to be determined through lower level strategic planning.</p>	<p>G-23</p>
<p>General Biodiversity</p> <p>1. Retain forest ecological elements and processes, including species richness, distribution and diversity at a moderate risk.</p> <p>2. Maintain the regional connectivity corridor between the lower elevations of the Columbia River system and Glacier National to serve as habitat linkage for the seasonal migration of mule deer and moose and to support Glacier National Park.</p>	<p>1.1 Support the Nestbox Monitoring Project funded by the CBFWCP for cavity nesting ducks. Support the Amphibian Monitoring Project funded by the CBFWCP to implement a long term monitoring program.</p> <p>1.2 Support the Amphibian Monitoring Project funded by the CBFWCP to implement a long term monitoring program.</p> <p>2.1 Apply the connectivity guidelines within the regional connectivity corridor as indicated in Chapter 3, section 3.3.</p>	

Objective	Strategy	Landscape Units
<p>Ungulates</p> <p>1. Maintain the abundance of elk, mule and white-tailed deer, moose and Rocky Mountain Goats within the sustainable carrying capacity of their habitat.</p>	<p>1.1 Maintain summer alpine habitat and minimize displacement of ungulates by developing an access management plan to ensure compatible activity and uses in the area, in accordance with the access management guidelines (Chapter 3, section 3.12).</p>	
<p>Wide Ranging Carnivores</p> <p>1. Maintain sufficient seasonal habitat, particularly with respect to high productivity avalanche slopes to retain the existing grizzly bear population.</p>	<p>1.1 Support the Grizzly and Black Bear Study funded by the CBFWCP to define bear population size, movements and mortality within the Columbia Valley east and west of Donald BC.</p>	

**Golden - Donald, Northbench
G-107**

Objective	Strategy	Landscape Units
<p>Agriculture</p> <p>1. Maintain opportunities for increased or improved agriculture activity.</p>	<p>1.1 Potential agricultural opportunities, particularly within the Dogtooth polygon, identified by individuals through proponent application to the appropriate agencies, will be reviewed and evaluated by an inter-agency government process which will involve affected parties and the public.</p>	<p>G-20 G-25</p>
<p>Recreation</p> <p>1. Maintain a range of recreational opportunities from roaded resource land to semi primitive non motorized.</p>	<p>1.1 A priority for lower level strategic planning will be to define commercial use levels, tenure allocations and recreation infrastructure, which will include the Kicking Horse River.</p> <p>1.2 Degree and location of motorized road closures to be determined through lower level strategic planning.</p>	<p>G-20 G-25</p>
<p>General Biodiversity</p> <p>1. Retain forest and grassland ecological elements and processes, including species richness, distribution and diversity at a low risk.</p> <p>2. Maintain the regional connectivity corridor between the Columbia River system and Yoho National Park to serve as habitat linkage for the seasonal migration of ungulates.</p> <p>3. Retain attributes for old growth dependent species and fur bearers.</p>	<p>1.1 The Kicking Horse Limber Pines should be designated as a Sensitive Area under the FPC.</p> <p>2.1 Apply the connectivity guidelines within the regional connectivity corridor as indicated in Chapter 3, section 3.3.</p> <p>3.1 In establishing priorities for Old Growth Management Areas, consideration should be given to Limber Pine in the Kicking Horse drainage.</p>	<p>G-20</p>
<p>Ungulates</p> <p>1. Maintain the abundance of mule and white-tailed deer, Rocky Mountain Bighorn Sheep and regionally significant Rocky Mountain Goats within the sustainable carrying capacity of their habitat.</p>	<p>1.1 Maintain summer alpine habitat and minimize displacement of ungulates by developing an access management plan for Frenchman's Ridge to ensure compatible activity and uses in the area, in accordance with the access management guidelines (Chapter 3, section 3.12).</p> <p>1.2 Maintain the ongoing habitat enhancement of Aspen stand thinning at Frenchman's Ridge.</p>	

Objective	Strategy	Landscape Units
	<p>1.3 Support the Willowbank Mountain Enhancement Project funded by the CBFWCP to manually brush and girdle deciduous habitat. This project will be monitored as to the effect on cavity nesters and other song birds which may utilize the snag trees.</p> <p>1.4 Complete the Frenchmans Ridge Enhancement Project funded by the CBFWCP to manually treat dense aspen and decadent browse shrubs.</p> <p>1.5 Support the Amphibian Monitoring Project funded by the CBFWCP to implement a long term monitoring program.</p>	
<p>Air Quality</p> <p>1. Improve air quality in Golden.</p>	<p>1.1 Continue to support and liaise with golden Air Quality Committee on a regular basis, attend meetings as needed to provide technical support.</p> <p>1.2 Work with the Committee to secure funding for purchase and operation of a TEOM and associated equipment and meteorological (wind speed and direction) equipment to allow real-time access to air quality data and real-time management of air quality.</p> <p>1.3 Develop some community expertise in routine operation and maintenance of TEOM as well as local expertise in evaluation of data and issuance of air quality advisories.</p>	

G-108

Kicking Horse, Beaverfoot and Kootenay Rivers

Objective	Strategy	Landscape Units
<p>Recreation</p> <p>1. Maintain a range of recreational opportunities from roaded resource land to semi primitive non motorized.</p>	<p>1.1 A priority for lower level strategic planning is to define recreation commercial use levels, tenure allocations and recreation infrastructure.</p> <p>1.2 Degree and location of motorized road closures to be determined through lower level strategic planning.</p>	<p>G-26</p>
<p>General Biodiversity</p> <p>1. Maintain the regional connectivity corridor between the low elevation drainages of Beaverfoot, Kicking Horse and Kootenay River with Yoho and Kootenay National Parks to serve as habitat linkage for the seasonal migration of elk, moose and grizzly bears and to support Yoho and Kootenay National Parks.</p> <p>2. Retain attributes for old growth dependent species and fur bearers.</p>	<p>1.1 Apply the connectivity guidelines within the regional connectivity corridor as indicated in Chapter 3, section 3.3.</p> <p>2.1 In establishing priorities for Old Growth Management Areas, consideration should be given to Montana Spruce in the upper Kootenay and Beaverfoot drainages, the Interior Douglas Fir and Interior Cedar-Hemlock zones in the Glenogle drainage, and the Englemann Spruce, Sub-Alpine Fir zone in all three drainages.</p>	
<p>Ungulates</p> <p>1. Maintain the abundance of mule and white-tailed deer, elk, moose and Rocky Mountain Goats within the sustainable carrying capacity of their habitat.</p>	<p>1.1 Maintain summer alpine habitat and minimize displacement of ungulates in the Beaverfoot and upper Kootenay drainages by developing an access management plan to ensure compatible activity and uses in the area, in accordance with the access management guidelines (Chapter 3, section 3.12).</p> <p>1.2 Maintain the priority summer habitat within this unit through application of the biodiversity emphasis under the FPC.</p>	
<p>Fisheries</p> <p>1. Maintain riparian wetland values in the Beaverfoot and Kootenay Rivers.</p>	<p>1.1 In establishing priorities for watershed assessments, consideration should be given to the Beaverfoot and Kootenay Rivers.</p>	

Appendix A Protected Areas

The following is a brief description of the new provincial parks that are located within the Golden Timber Supply Area. As well, there is a statement of management intent which defines the proposed management emphasis for the area. The new provincial parks will be managed in accordance with the general management direction outlined in Chapter 4. BC Parks will be undertaking a planning process to develop Park Masterplans for each of the new provincial parks. There will be opportunities for public input and review of the Park Masterplans. An indication of planning priority for each of the new parks is identified in Chapter 4.

The Cummins Provincial Park

The new Cummins Provincial Park is an unroaded drainage on the east side of the Mica Reservoir in the north-east corner of the region. The area contains a connected series of three spectacular waterfalls and two glacial lakes set against the backdrop of the Clemencea Ice Fields.

The area contains nationally significant recreation values for mountaineering and ski-touring. Scenic values are very high. The new park provides opportunities for wilderness expeditions in a remote and spectacular area.

The park includes important riparian habitat of meadows and marshes and underrepresented low elevation forest. The area also includes important habitat for grizzly bear, mountain goat and mountain caribou.

As a result of the existence of both significant recreation values, as well as high wildlife and biodiversity values, the management emphasis in the upper drainage will be recreation while the focus on the lower drainage will be conservation.

Appendix B

GOLDEN: Rationale for size, boundary locations and biodiversity emphasis assignments, as outlined in Chapter 3, section 3.2 of the KBLUP implementation strategy.

Landscape Unit #	Landscape Unit Name	BEO Assignment	Rationale for Size and Boundary Location	Rationale for BEO Assignment
1	Upper Wood	High	Designed to encompass the non-reservoir and unaccessed components of the watershed, the entire Heritage Trail and unnamed drainage linking to Cummins Park.	Old growth, regional connectivity, caribou, grizzly bear, remoteness/wildland attributes, fish, proximity to Hamber and Jasper Parks, designated as an S.R.M.Z.
2	M.D.E.	Intermediate	Designed to link the North side of Wood River by encompassing the Molson, Dainard and Encampment drainages.	Caribou, connectivity, old growth
3	Lower Wood	Low	Designed to encompass the entire South, non-reservoir side of the Wood arm which has a similar aspect and high operable component.	Caribou, old growth, connectivity
4	TSAR	Intermediate	Designed to encompass an area of similar aspect along the East side of the reservoir from Wood arm to the Kinbasket River.	Caribou, connectivity
5	Cummins		Designed to encompass the Cummins River watershed.	
6	Kinbasket	High	Designed to encompass the Kinbasket River watershed.	Old growth, regional connectivity, wetlands, grizzly bear, designated as an S.R.M.Z.
7	Sullivan	Low	Designed to encompass the Sullivan River watershed.	Fisheries (kokanee), grizzly bear
8	Foster/Garrett	Low	Designed to encompass an area of similar aspect along the East side of the reservoir from the Sullivan River to the aspect change associated with the Foster/Garrett landscape unit.	Winter range
9	Chatter/Prattle	Low	Designed to encompass the entire Chatter and Prattle Creek watersheds. Considering the relatively small area of each of these systems, amalgamation was considered more appropriate than separation.	Fisheries (Bull Trout - Chatter Creek)
10	Bush River	Low	Designed to encompass the entire Bush River watershed.	Connectivity, fisheries (Bull Trout)
11	Goosegrass	Intermediate	Designed to encompass an area of similar aspect along the West side of the reservoir from the Goosegrass ecological reserve to Windy Creek.	Caribou, connectivity, unique habitat features

Landscape Unit #	Landscape Unit Name	BEO Assignment	Rationale for Size and Boundary Location	Rationale for BEO Assignment
12	Windy Sir Sanford	High	Designed to encompass the entire Windy and Austerity drainages.	Caribou, regional connectivity, remoteness/wildland attributes, grizzly bear, fisheries (Bull Trout), designated as an S.R.M.Z.
13	Bachelor	High	Designed to encompass the entire Bachelor Creek watershed.	Caribou, regional connectivity, old growth, designated as an S.R.M.Z.
14	Ventego	Low	Designed to encompass the entire Ventego Creek watershed.	
15	Espanade	Low	Designed to encompass an area along the West side of the reservoir from Bachelor Creek to the Southern end of the reservoir.	Alpine habitat
16	Blackwater Ridge	Invermere	Designed to encompass all the benchland and upper extremities of the Blackwater and Succour Creek drainages.	Winter range, ICHxw subzone representation, fisheries (kokanee, Bull Trout), grizzly bear
17	Hope Goodfellow	Low	Designed to encompass the entire Hope Goodfellow watershed.	
18	Valenciennes	Low	Designed to encompass the entire Valenciennes watershed.	Regional connectivity
19	Bluewater/ Waitabit	Low	Designed to encompass the entire Bluewater and Waitabit River watersheds. Considering the relatively small area of these drainages it was considered more appropriate to amalgamate than separate.	Wildland attributes (Waitabit), old growth, R.M.goats, grizzly bear (Bluewater)
20	Moberly	Intermediate	Designed to encompass the Columbia River terraces along the N.E. side of the Columbia River.	Regional connectivity, ICHxw subzone representation, wetlands and interface, winter range, R.M. goats
21	Blaeberry	Intermediate/ Low	Designed to encompass the entire Blaeberry River watershed.	Regional connectivity, fisheries Bull Trout), R.M. goats
22	Quartz	Intermediate/ Low	Designed to encompass the entire Quartz Creek watershed.	Ungulate winter range, unique habitat (Whitepine stands)
23	West Bench	Intermediate	Designed to encompass the benchland on the West side of the Columbia River from Donald to Canyon Creek.	Regional and District connectivity, winter range, wetlands
24	Canyon	High	Designed to encompass the entire Canyon Creek watershed.	Old growth, remoteness/wildland attributes, designated an S.R.M.Z.
25	MT.7	Low	Designed to encompass an area along the East side of the Columbia River from the confluence of the Columbia River to the South end of the Golden Forest District.	R.M. goats, ICHmk1, Msdk, IDFun, subzone representation, private land
26	Kicking Horse Beaverfoot	High/ Intermediate	Designed to encompass the entire Glenogle Creek and Beaverfoot River watersheds.	Connectivity, winter range, wetland habitat

Landscape Unit #	Landscape Unit Name	BEO Assignment	Rationale for Size and Boundary Location	Rationale for BEO Assignment
27	Moose Dainard	High	Designed to encompass the entire Moose, Dainard and Ice River watersheds.	grizzly bear, regional connectivity, remoteness/wildland attributes, fisheries (Bull Trout), designated as an S.R.M.Z.
28	Kootenay	Intermediate/ Low	Designed to encompass that section of the Kootenay River situated within the Golden Forest District.	regional connectivity, fisheries(Westslope cutthroat trout)
29	Swan	Intermediate/ Low	Designed to encompass an area of similar aspect along the West side of the reservoir from Windy Creek to Bachelor.	caribou