

STRATEGIES
FOR THE
KOOTENAY BOUNDARY HIGHER LEVEL PLAN ORDER

May 14, 2001

Part 2

Resource Management Zone Objectives

General Information:

- (1) Unless otherwise noted in the HLP, definitions, processes and procedures in the FPC (Acts, Regulations, Guides and guidebooks) should be used.
- (2) The MOU for Data Management between the Nelson Forest Region (Kootenay Data Centre) and Ministry of Environment Kootenay Region (GIS Centre) provides direction on data custodian responsibilities, updating and documentation of data for the HLP. (See Appendix 1).
- (3) Where the FES and the senior habitat biologist are noted in the DEO matrix (appendix 2), the FES is the primary contact. The senior habitat biologist is identified to cover extended absences or vacancies by the FES. For Objective 8 - FMER - the primary contact is the range specialist, then the FES and then the senior habitat biologist in the event of extended absences or vacancies of the former two. In instances where the regional manager and one of their staff are identified, the primary contact is the staff. For the Boundary district, positions identified in the DEO matrix refer to BC Environment staff in the Southern Interior Region.

1. Biodiversity Emphasis:

- (1) As per the delegation letter, BEOs modified as a result of changes to BEC units, landscape unit boundaries or other technical inventory, can be approved by the regional manager, Ministry of Forests, the regional director, Ministry of Environment, Lands and Parks, and the regional manager, Ministry of Energy and Mines. Any other broad and direct proposed changes to the BEOs require approval by the three Code Ministers.
- (2) For purposes of the HLP Order, the landscape unit boundaries are formally defined as per Map 1.1.

2. Old and Mature Forest:

- (1) If a landscape unit does not have important avalanche tracks for grizzly bear or connectivity corridors, refer to the Landscape Unit Planning Guide for general direction on deployment. Note section 3 (a) of Objective 5 has more detail than the Landscape Unit Planning Guide. If a landscape unit has either, refer to Objective 5 and its strategies for deployment.
- (2) For purposes of meeting old forest targets, the oldest of the old should generally be retained. The same principle can be applied to meeting mature seral targets. However, avoid this rule if it will compromise other values such as protection of

rare or under represented stands for OGMA's. For additional information refer to the "Evaluation of Candidate Old Growth Management Areas" in Appendix 3.

- (3) For purposes of Objective 2 (2), recruitment strategies for old growth should address rare or under represented forests and not be compromised by the principle of selecting the next oldest (see Appendix 3 for additional detail).

- (4) Where recruitment is necessary to meet objective 2 and the decision to map has been made (especially for mature), the following priority should be considered:

- a) Management values identified in Objective 5 (3) (a) where there is overlap with the connectivity corridor and important avalanche tracks;
- b) Management values in Objective 5 (3) (a) - no overlap;
- c) Connectivity corridors and/or important avalanche tracks.

NOTE: Objective 2 (2) prescribes that recruitment strategies should be designed to meet the objective in the shortest timeframe. There is however, provision to select younger stands should the District Manager and DEO agree that there are benefits to do so.

- (5) According to current provincial policy, the 1% timber impact associated with the establishment of WHA's under the IWMS is independent of the HLP. To the degree possible, the habitat needs of identified wildlife species should be addressed in the deployment of old and mature forests under this objective. This will allow more WHA's to be designated within the timber supply impact limit set by government.

In the event that a WHA has already been established, the choice may be made to locate old or mature forest to overlap the WHA (or portion thereof). These areas of old or mature forest will be accounted for under Objective 2. In such a case, the WHA (or portion thereof) will no longer contribute to the 1% timber supply impact and it's previously calculated timber supply impact budget will be made available for additional WHA placement in another location.

For this purpose, the old and mature deployment in connection with Objective 2 will be tracked by the Forest Districts. The 1% impact will be tracked by the regional WHA committee.

- (6) Partial cutting prescriptions of mature forests can be designed such that the definition of mature forest is retained. If these stands are to count as mature under Objective 2, then these prescriptions should be designed such that after partial cutting, the residual stand volume and stand attributes are greater than 70% of the original stand (i.e. all original diameter classes are represented). Note: the 70% is in relation to a uniform cutting prescription over the prescribed area (i.e. generally single tree or small group selection).

This strategy relates to the definition of mature forest as prescribed by the Biodiversity Guidebook. This should not be confused with the 40% basal retention in relation to the definition of clearcut.

NOTE: Regarding Objective 8 (e), the contribution of open and managed forest towards old and mature targets is not tree stocking dependent.

- (7) Old forest target hectares should be mapped but no metres and bounds are necessary during the Landscape Unit Planning process. Mapping of mature forest target hectares should also be considered particularly if related to Objective 5.

- (8) Until provincial policy is confirmed, woodlots are excluded from the landbase to which percentages for targets apply. If, through woodlot management plans, there is a commitment to manage for any resource value that will require the maintenance of mature or old forests (that meet the definition in the HLP), they should be accounted for in the implementation of Objective 2 and 5 under the authority of Objective 5 (3) (a) (ix) of the HLP.

- (9) In cases where a mature deficit exists even after including stands one age class younger up to a maximum 25 percent of the target as per Objective 2 Section 3, the deficit should be reduced or eliminated through the inclusion of any surplus old forest stands that exist after old targets have been satisfied.

- (10) MoF and MELP will jointly produce tables that show surplus/deficits for mature and old by landscape unit and variant.

- (11) As per the delegation letter, Objective 2 targets may be modified if it can be demonstrated to the regional manager, Ministry of Forests, and the regional director, Minister of Environment Lands and Parks, that short-term impacts on forest licensees are deemed to be unacceptable.

- (12) As per the delegation letter, reapportioning old and mature forest area targets among BECs within a landscape unit may be done upon approval of the regional manager, Ministry of Forests, regional director, Minister of Environment Lands and Parks and the regional manager, Ministry of Energy and Mines.

3. Caribou:

Forest Cover Selection:

- (1) The following descriptions of suitable caribou habitat attributes will assist in forest cover selection, partial cutting prescriptions and identifying caribou habitat related benefits for recruitment strategies.

- (2) The location of forest cover contributing to the maintenance of caribou habitat should take into account the following:

- a) Maintaining connectivity between seasonal habitats.
- b) Maintaining a full range of seasonal habitats.
- c) Maintaining large contiguous patches.
- d) Selecting areas of the gentle slope gradients which are preferred by caribou.
- e) Avoiding areas of topographic ruggedness which inhibit caribou use.

- f) Selecting habitat use areas as indicated by inventory or radio telemetry data.
- g) Maintaining dense canopy closure for snow interception in areas of early winter habitat.
- h) Avoiding areas of high industrial or recreational access use.
- i) Selecting windfirm stands.
- j) Selecting stands with abundant arboreal lichen, particularly bryoria spp.

Partial Cutting:

- (3) Where this objective prescribes partial cutting, the following should be considered:

- a) Avoid partial cutting in early winter habitat. Partial cutting is most suited in late winter habitat.

- b) Residual stands should be wind-firm (the literature suggests that less than 30% volume removal maintains wind firmness). This volume removal can be accomplished through either single tree or group selection with openings averaging in the 0.1 – 0.2 ha range to a maximum of 1.0 ha for operational reasons.

- c) If partially cut stands are to meet the definition of mature in Objective 2, refer to strategy 2 (6) above.

- d) Caribou prefer Balsam and Balsam-Spruce forest types to Spruce and Spruce-Balsam. Give preference to maintaining the balsam component in areas of mixed species in ESSF.

- e) Abundant arboreal lichen available on standing trees is critical to the survival of caribou. Lichen abundance tends to be low on trees with few branches or dense, tangled branches. Give preference to maintaining those trees, both live and dead, with the greatest abundance of lichen found within 7 meters of the ground.

Other Areas Within Mapped Caribou Habitat:

- (4) In other portions of the mapped caribou habitat the following strategies should be considered:

- a) Where even-aged management is practised consideration should be given to managing half of the area on extended rotations of at least 151 years to ensure options are available in the event of extensive habitat loss due to catastrophic disturbances. Incremental timber impacts and costs should also be considered in relation to the extent this strategy is implemented.
- b) Where uneven-aged management is practised, prescriptions should be designed to retain trees supporting abundant lichen biomass.

c) Aggressive reforestation should be practised to reduce the availability of forage for other ungulates that attract predators into caribou habitat.

- (5) As per the delegation letter, the regional manager, Ministry of Forests, the regional director, Ministry of Environment, Lands and Parks, and the regional manager, Ministry of Energy and Mines, can modify Objective 3, including map 3.1 and table 3.1 to incorporate new information on caribou habitat within three (3) years and thereafter as appropriate.

- (6) In terms of integrated resource management, it may be desirable to redistribute the caribou forest cover retention targets by combining Landscape Units. That is, some LU's would have less forest cover retention than prescribed by this objective and others would have more, but in combination the prescribed retention targets would be met. This can be accomplished through the delegation letter (point d) which allows for modification of Objective 3. Note however, old and mature targets under Objective 2 have to be met on an individual LU basis.

4. Green-up / Patch Size:

- (1) This objective does not apply to woodlots.
- (2) To assist DMs with application of 4(a) ii, visually sensitive area is defined as an area that is considered to be sufficiently sensitive to visual alteration to warrant special consideration in strategic and operational planning. It is an area for which the Visual Resource Management Process should be applied. These areas may include viewsheds that are visible from communities, public use areas, travel corridors including roadways and waterways and any other viewpoint so identified through a referral or planning process. (From Visual Landscape Inventory Procedures and Standards Manual).

- (3) It is very difficult to achieve patch size distribution over three seral classes. For example, there is no common definition of patch (over time) and it is difficult to change the legacy of current patch sizes without causing other environmental and timber impacts. Achieving desired patch size distribution should not compromise other environmental HLP objectives and resource management needs. For example, these patch size recommendations should not be employed within ungulate winter ranges where edge effect and short distances to cover are desirable management strategies. Similarly, the patch size recommendations may also not be appropriate in Community Watersheds.

- (10) It is recognised that stand level assessments may not be completed when larger openings are proposed in a Forest Development Plan. However, Forest Development Plans should provide sufficient detail, using maps and/or written descriptions to illustrate that the cutblock incorporates elements that would likely exist in a recent natural disturbance.
- The following applies to cutblocks greater than 40 hectares.

Structural Characteristics of Natural Openings:

- (9) The configuration of the large patches should emulate the effects of physiographic features that would naturally influence such a disturbance pattern e.g. irregular boundaries.
- (8) Patch size distribution should normally apply by NDT and normally within a landscape unit. However, in some cases, combining two or three landscape units may be appropriate if patch size distribution is more readily achieved and other management objectives are better met. Furthermore, there are instances where an NDT is elevationally narrow and should be combined with an adjacent NDT for purposes of applying this objective.
- (7) To the extent possible, achieve medium and large patches of early seral through amalgamation of existing cutovers in close proximity to each other (i.e. present areas of significant forest fragmentation).
- (6) Where the medium size patches (40-80ha) and larger size patches (80-250ha) of mature or old forest are planned for harvest, identify where possible, similar size leave patches with similar characteristics during preparation of Forest Development Plans. When establishing OGMA's with the intent to retain them over time (not shifting), refer to the size distribution in Appendix 3.
- (5) NDT4 is not included in Table 4.1 as it is addressed through Objective 8 and its strategies. The implementation of Objective 8 and its strategies will determine patch size distribution for NDT 4

* Within NDT 3, PI stands may have patch sizes that exceed 250 ha.

Patch size (ha)	% Forest area within landscape unit (note see strategy 6 below)	NDT 1	NDT 2	NDT 3*
<40	30 - 40	30 - 40	30 - 40	20 - 30
40 - 80	30 - 40	30 - 40	30 - 40	25 - 40
80 - 250*	20 - 40	20 - 40	20 - 40	30 - 50

Table 4.1 - Patch size recommendations for NDT 1 to 3

- (4) Table 4.1 is meant to assist in Objective 4 (b) of the HLP.

- (11) Further to the Provincial Wildlife Tree Policy and Management Recommendations (February, 2000), cutblock design should include, but not be limited to the following leave elements within the perimeter of the proposed opening.
- a) Forested islands to mimic "skips" which tend to be present following fires, (including areas of intact undisturbed ground cover).
 - b) Dead trees.
 - c) Individual trees of the largest diameter classes, preferably of low economic value.
 - d) Large down woody material randomly distributed.
 - e) Clumps of advanced regeneration or understory trees particularly in ESSF stands.
- Note: When identifying islands/skips or individual trees for retention, consideration should be given to tree species which are fire resistant (e.g. Lw, Rd) and locations most likely to remain unburned during wildfire (e.g. north & east facing slopes, wet sites).
- (12) There is no consensus as yet on a definition for patch. Discussions are ongoing and it is anticipated that a definition of patch will be provided at a later date.

5. Grizzly Bear Habitat (Avalanche Tracks) and Connectivity Corridors:

General:

- (1) Objective 5 (1) means that the amount, location and width of forest cover adjacent to important avalanche tracks are jointly determined by the DM and DEO. Objective 5 (1) (a) specifies that the DEO is responsible for identifying important avalanche tracks.

- (2) The degree to which this objective can be managed for is related to the old and mature targets derived under Objective 2 and other HLP objectives.
- (3) When determining the amount of old and mature forest targets remaining after accounting for (3) (a) i-ix of Objective 5, ensure that old and mature forest target reductions associated with any one of i through ix are accounted for only once during the determination process.

- (4) Protected areas are Provincial Parks, Federal Parks, ecological reserves and approved Goal 2 protected areas.

- (5) There is no hierarchy within Objective 5, subsection 3(a) of the HLP. The hierarchy is between subsection 3(a) and 3(b).

- (6) If forest targets remain after meeting connectivity and avalanche track requirements, deployment should follow the Landscape Unit Planning Guide.

- (7) For purposes of Objective 5, MoF (Region) and MELP (Region) will jointly provide tables that show old and mature forest targets available for important avalanche tracks and connectivity corridors. For purposes of Objective 5 (3) (a), the tables will not address old and mature forests in the following:

- a) rare or under-represented old forests;
- b) sensitive areas, interpretive forest sites, recreation sites and recreation trails;
- c) mapped wildlife tree patches greater than 2 ha;
- d) visual quality objectives;
- e) commitments in woodlot management plans; and
- f) actual riparian reserve zones.

- (8) Until provincial policy is confirmed, woodlots are excluded from the landbase to which percentages for targets apply. If, through woodlot management plans, there is a commitment to manage for any resource value that will require the maintenance of mature or old forests (that meet the definition in the HLP), they should be accounted for in the implementation of Objective 2 and 5 under the authority of Objective 5 (3) (a) (ix) of the HLP.

- (9) Generally, the mature component should be used to manage for important avalanche tracks and connectivity corridors. The old component can be used but caution should be exercised to ensure use of the old component does not

adversely affect other conservation objectives such as protection of rare or under represented old growth forests.

- * (10) Generally, rare and under represented old forests will be captured by the OGMA establishment process.

- (11) Partial cut stands can contribute to mature targets of Objective 2 if the definition of mature forest is retained. If these stands are to count as mature under Objective 2 then these prescriptions should be designed such that after partial cutting the residual stand volume and stand attributes are greater than 70% of the original stand (i.e. all original diameter classes are represented). Note: the 70% is in relation to a uniform cutting prescription over the prescribed area (i.e. generally single tree or small group selection).
- This strategy relates to the definition of mature forest as prescribed by the Biodiversity Guidebook. This should not be confused with the 40% basal retention in relation to the definition of clearcut.

NOTE: Regarding Objective 8 (e), the contribution of open and managed forest towards old and mature targets is not tree stocking dependent.

- (12) To the degree possible, attempt to overlap between forest cover adjacent to avalanche tracks and in mapped connectivity corridors with forest cover needs for other objectives, such as visuals.

Avalanche Tracks:

- (13) Data shows that grizzly bear beds within forested areas adjacent to avalanche tracks are concentrated within 25 meters from the avalanche track. Partial cutting should be avoided in these areas.

- (14) During LU Planning, forest cover retained adjacent to important avalanche tracks should be mapped and accounted for in relation to old and mature seral targets.

- (15) Road crossings of important avalanche tracks should be kept to a minimum and avoided if possible. Where crossings are necessary, the highly productive portions should be avoided by at least 100 meters above and below elevationally. Given site specific variation, any portion of an avalanche track may be highly productive. Commonly, the toe of the runout zone is highly productive. In the absence of site specific assessments road crossings should avoid the runout zone. Right-of-way clearing through avalanche zone retention areas should be as narrow as possible. Road access should be closed when operations are completed.

- (16) The DEO will provide or make available the identification of important avalanche tracks to the DM. The DM will make the information known for consideration in the FDP process.

SP
Abundance
in designated
Mature Habitat

(17) Generally mature and old forest cover need not be maintained along the entire lengths of important avalanche tracks. This cover should be located adjacent to the highly productive portions and extend a minimum of 50 meters elevationally above and below these portions. *occurred to meadows?*

(18) Mature and old forest cover should not be less than 50 meters in width and preferably at least 100 meters. Narrow forested strips situated within avalanche complexes should be left intact.

(19) Harvesting, hauling and mechanized silvicultural operations in close proximity to important avalanche tracks should be scheduled to avoid disturbance during the period of active grizzly bear use. This period is most commonly between May 15 and July 15. However, where important avalanche tracks remain relatively wet and productive throughout the summer (e.g. wet BEC subzones/variants) grizzly bear use may extend into August. In these areas operations proximal to important avalanche tracks should be undertaken after September 1.

Connectivity:

(20) Sequence of priority deployment of old and/or mature targets to address connectivity and grizzly bear habitat (avalanche tracks):

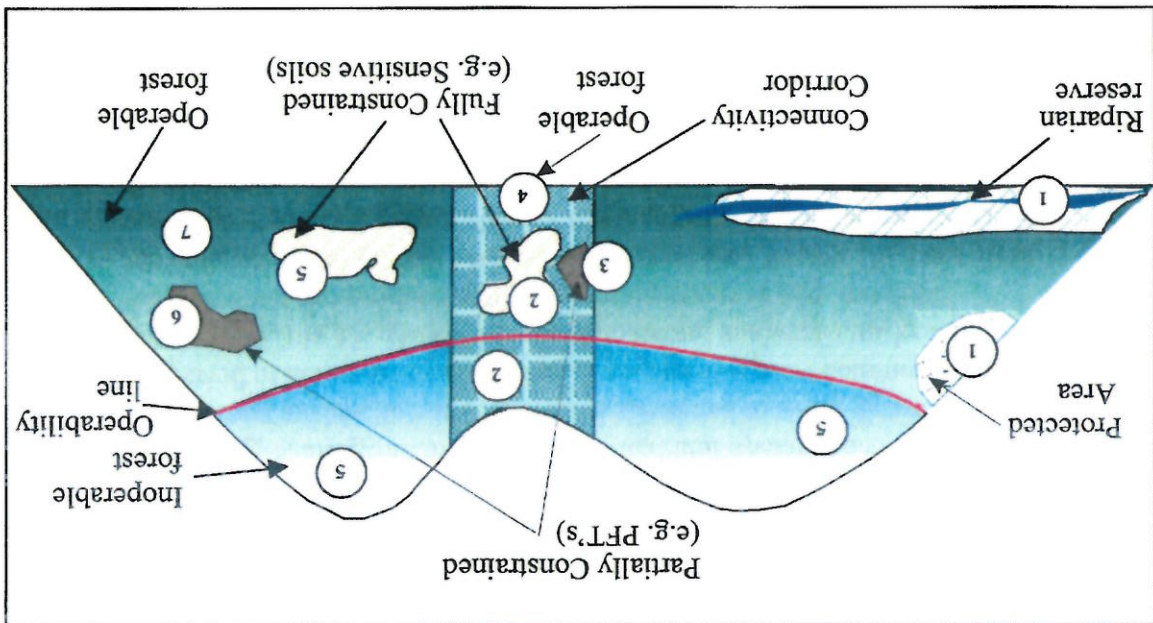


Diagram 5.1

Steps:

- 1 Account for old and/or mature contributions from Protected Areas, HLP Resource Emphasis Areas (e.g. Caribou), riparian reserves and other objectives, both inside and outside mapped connectivity, as described in HLP Objective 5, Section 3 (a). The above diagram shows two examples e.g. Protected Areas, riparian reserve.

- 2 On non-contributing landbase within mapped connectivity as per HLP Objective 5, Section 3 (b). That is, inoperable and fully constrained areas such as 100% netdowns for sensitive soils and problem forest types.

- 3 On partially constrained areas on operable forest within connectivity corridors such as sensitive areas or problem forest types with less than 100% netdowns as per HLP Objective 5, Section 3 (b).

- 4 On the unconstrained timber harvesting landbase within mapped connectivity as per HLP Objective 5, Section 3 (b).

- 5 On the non-contributing landbase, outside mapped connectivity, as per LUPG (note this includes fully constrained areas on the operable landbase e.g. 100% netdowns). This step can also include old and/or mature forest on slopes >80% within the areas denoted by step 2 above.

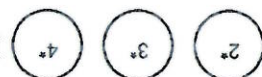
Imp/op/c
Imp/c/s

20

On partially constrained areas on operable forest outside connectivity corridors such as sensitive areas or problem forest types with less than 100% netdowns as per LUPG. This step can also include old and/or mature forest on slopes >80% within the areas denoted by step 3 above.

On the unconstrained timber harvesting landbase outside mapped connectivity as per LUPG. This step can also include old and/or mature forest on slopes >80% within the areas denoted by step 4 above.

Note:



Forest situated on slopes > 80% are excluded from these steps.

(21) There can be instances where after accounting for old and mature targets as per Objective 5 (3) (a), the residual targets available to address connectivity corridors as per Objective 5 (3) (b) are fully satisfied by existing old and mature stands situated outside mapped connectivity corridors and no such stands exist within mapped connectivity corridors. In this situation, the following options can be considered:

- a) Accept this deployment pattern;
- b) Relocate connectivity corridors to better capture those old and mature stands;
- c) Recruit within the mapped connectivity corridors and harvest existing old and mature stands outside of mapped connectivity corridors after recruitment areas attain suitable ages or attributes.

(22) Regional connectivity corridors as shown on Map 5.1 of the HLP should be refined and mapped through the Landscape Unit Planning process.

- (23) Before refining regional connectivity corridors, consider:
- a) The need for repetitive formal HLP amendments. For example, it may be desirable to shift the location of forest connectivity as nearby forest stands become mature. Accordingly, the refined connectivity corridors should be wide enough to accommodate this future strategy.
 - b) That narrowing of the connectivity corridors can change deployment of old and mature forest targets in relation to the contributing and non-contributing land base.
 - c) The connectivity corridor locations, as well as potential refinements, in adjacent forest districts.

(24) When regional connectivity corridors are refined, amend the HLP map 5.1 and set landscape unit objectives concurrently.

(25) The regional connectivity mapping was done at a 1:250,000 scale and included macro level considerations of physiographic and human made barriers. In addition to the connectivity corridor refinement within the presently mapped corridors (as discussed above), there could be instances at a more localized level where maintenance of connectivity would be better suited outside the areas identified on Map 5.1 of the HLP. Such modification during the LU Planning

- process is acceptable, however, whether the mapping refinement is within or outside the presently mapped corridors, an amendment to Map 5.1 of the HLP must be approved by the MOF Regional Manager, the MELP Regional Director and the MEM Regional Manager prior to establishment of the LU objective.
- (26) TRIM mapping, as one example, can be used to determine slopes greater than 80% as per Objective 5 (3)(c).

6. Consumptive Use Streams:

- (1) A stream licensed for human consumption is defined as: a stream licensed under the Water Act for the purpose of human consumption except a stream within a community watershed as designated under section 41 of the Forest Practices Code of British Columbia Act.
- (2) Water intake map is defined as: a map or digital information, maintained by MELP and posted on the MELP Kootenay Region internet site (<http://www.for.gov.bc.ca/pab/lup/kb/maps.htm>), which shows the location of water intakes licensed for human consumption but excludes those intakes located within a community watershed.
- (3) For other definitions of terms, refer to the Riparian Management Guidebook, IWAP Guidebook and Forest Practices Code of British Columbia Act.
- (4) Water intake mapping will be provided by MELP to Ministry of Forests who will, in turn, notify resource developers. The mapping will be updated periodically to add, delete or adjust the location of intakes. The location of some water intakes as shown on the "Water Intake Map" may differ from what is constructed on the ground. The application of this objective should reflect actual intake and stream locations found on the ground.
- (5) In spite of reasonable efforts by resource developers to confirm intake and stream locations in the field, there may still be situations where Objective 6 is incorrectly applied. Where misapplication has occurred as a result of poor information supplied by government, the resource developer will not be held responsible. These situations may arise because the water intake map varies too much from the actual location, the intake is shown on the wrong stream, or the intake does not exist in the field. When a resource developer is not able to confirm an intake or stream through fieldwork, this should be noted in the prescription so that due diligence is established.
- (6) MELP will develop the methodology to incorporate new intake location information received from forest licensees and contractors, with quality assurance, into the water intake map. Procedures for utilization of this information to update water licenses will also be investigated.
- (7) The primary objective within stream side management zones of S5 and S6 streams licensed for human consumption, is to provide for the protection and management of water quality associated with these streams. The best

management practices of S4 streams (interior), as set out on page 50 of the Riparian Management Guidebook, will help in the development of the specific measures to safeguard water licensed for human consumption in Objective 6 (1) (a) (ii). The best management practices may be modified when an alternate could provide better results for water quality protection.

(8) To assist in the application of Objective 6, refer to the diagram below.

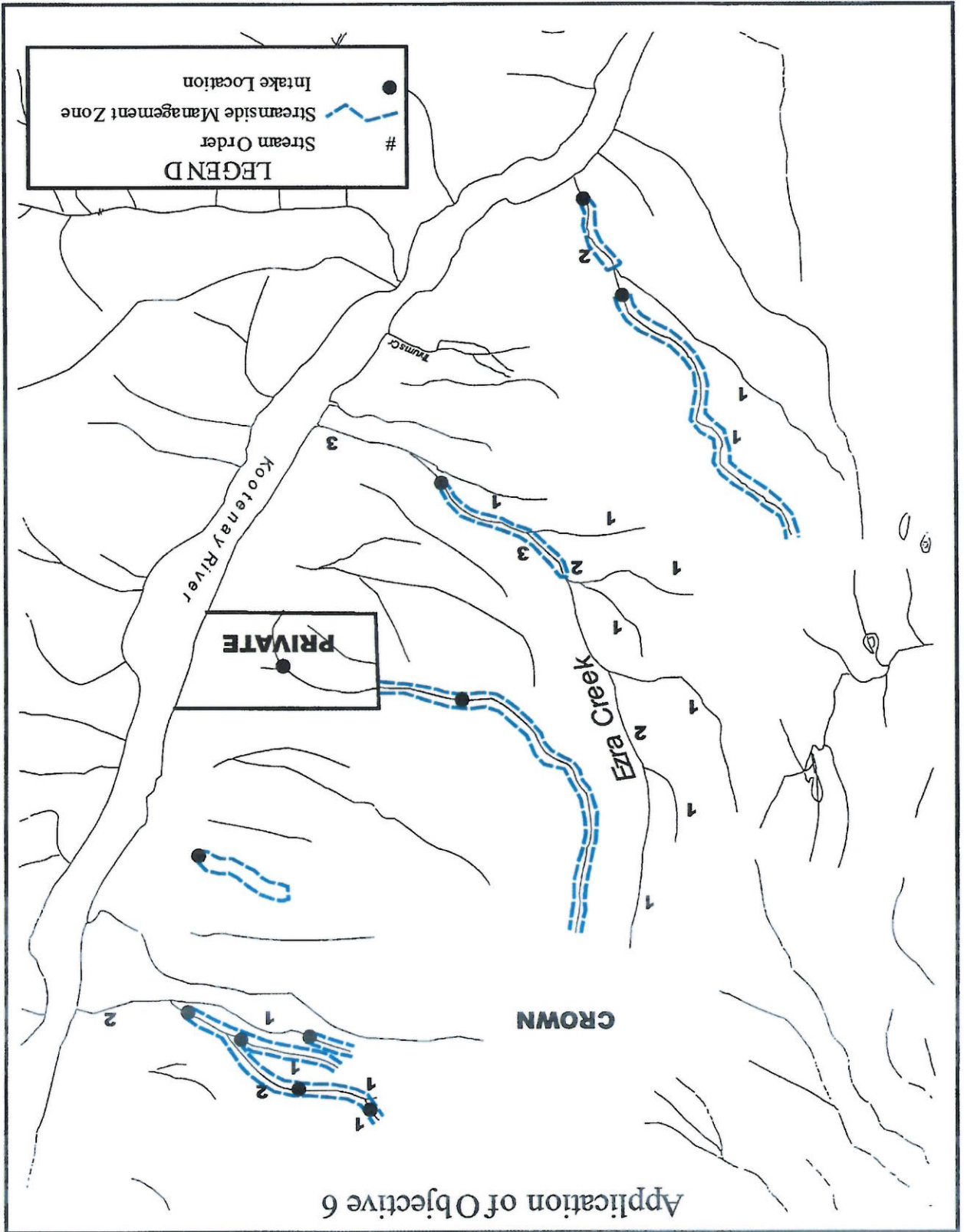


Diagram 6.1 Application of Objective 6

7. Enhanced Resource Development Zones – Timber:

- (1) In identifying ERDZ-T areas, the timber harvesting land base as identified in the most recent timber supply review for timber supply areas and tree farm licences was used. Subsequently, Phase 1 and Phase 2 constraint areas identified in the KBLUP-IS were removed.

a) Phase 1 constraints included: the removal of all community and domestic watersheds, high and most intermediate BEOs, connectivity corridors, caribou habitat, coal ERDZ, ALR and settlement lands. These Phase 1 constraints were judged incompatible with ERDZ-Ts. Note as of May 2001 the Boundary Forest District domestic watershed removals are yet to be made, pending review of the mapping by DEO and DM.

b) Phase 2 constraints involve the deletion of regionally significant visuals (VQOs within Class 1 and 2), and ungulate winter range.

c) For operational planning purposes, it is important to recognize that high value fish streams were not used in the screening process to identify suitable ERDZ-Ts, as recommended by the KBLUP-IS.

- (2) Further ERDZ-T adjustments, as reflected in the delegation letter, may be undertaken or confirmed, including:
 - a) Excluded watersheds.
 - b) Portions of connectivity corridors.
 - c) Compatible managed forest areas within Natural Disturbance Type (NDT) 4.
 - d) Ungulate winter range mapping.
 - e) Class 1 and 2 visuals.
 - f) Key grizzly bear habitat components under the Grizzly Bear Conservation Strategy.
 - g) Red/blue listed species.
 - h) Areas incompatible with other tenures.

- (3) Further ERDZ adjustments may be considered should management practices for ERDZ-T differ from the Forest Practices Code.
- (4) Environmental stewardship on ERDZ-T lands will be maintained through application of the Forest Practices Code.

(5) WHA's under the IWMS may be established within ERDZ-T.

- (6) Successful regeneration, as noted in Objective 7 (1) (a), is to be defined by the District Manager. For example, it could be confirmed by reconnaissance survey.
- (7) As per the delegation letter, adjustments to the ERDZ-T map will be approved by the regional manager, Ministry of Forests, the regional director, Ministry of Environment Lands and Parks and the regional manager, Ministry of Energy and Mines.

(8) Table 7.1 describes possible management strategies for ERDZ-Ts.

Table 7.1 - Management Strategies / Regimes for ERDZ-Ts

Management Strategy / Regime	Direction
Timber Harvesting Landbase	Within the ERDZ-T, emphasis will be placed on increasing the THLB through the development of new timber harvesting technologies, the utilization of problem forest types, and minimizing site degradation.
Utilization	Enhanced utilization standards may apply.
Rate of Cut	FPC watershed assessments are applicable. Harvest ages and rotations may be determined primarily by maximizing mean annual increment.
Partial Cutting in OGMA's	Some volume removal in NDT 4, subject to agreement.
Reforestation	Accelerated backlog reforestation are encouraged. Efforts to reduce regeneration delay are encouraged. Genetically improved planting stock may be used to reduce greenup delay. Forest vegetation management may be applied, possibly including herbicides. Early density control is encouraged.
Species Management	Optimal species selection and single species management may be applied where ecologically suited to the area
Pre-Commercial / Commercial Thinning	Multiple thinnings may be undertaken.
Fertilization	Multiple fertilization per rotation may be applied.
New Domestic Watersheds	ERDZ-T areas will be reviewed jointly by RM and RD to confirm "excluded watersheds" Within "excluded watersheds", the consumptive use stream provisions of HLP Objective 6 will not be applied to new consumptive use water licenses issued after enactment of the HLP order.. Watersheds that lose consumptive use status, may be considered for ERDZ-T incorporation if unaffected by other Phase 1 and 2 values. ERDZ-T deletions may be considered by RM and RD as a result of the issuance of water licenses from applications submitted for human consumption prior to the enactment of this order.
NDT 4	ERDZ-T objectives will not take precedence over open forest or grassland restoration objectives in NDT 4

8. Fire-Maintained Ecosystems:

- (1) Ecosystem restoration plans identifying all shrubland, open range, open forest and managed forest ecosystem components based on site series (as listed in Table 2, Section 3.10 of the Kootenay-Boundary Land Use Plan – Implementation Strategy) will be completed for the NDT 4 regime to be managed as a fire-maintained ecosystem.
- (2) Open forest will contribute a maximum of 90% and managed forest will contribute a minimum of 10% towards old and mature targets. On a site specific

basis, "classic" old and mature stands found in open range can also contribute to the 90%. In such instances, inclusion of open range would be considered an acceptable variance to the definition of open forest in that although having less trees per hectare, due to their size and maturity, the stand exhibits the crown closure characteristics of open forest (5-40%). Any open range that contributes to the old and mature targets must also be part of the Crown Forested Landbase (CFLB) hectares.

(3) Due to their nature, open forest stands will not necessarily create interior forest conditions.

(4) A variety of treatments will be applied including harvesting, spacing and prescribed burning in the open range and open forest components with a goal of achieving the initial restoration targets as defined in Table 8.1. Table 8.1 will only provide interim targets for the Boundary Forest District, pending completion of analyses of NDT4 characteristics for that area. Treatments will, where applicable, consider Old Growth Management Areas in logistical planning.

(5) A range of tree stocking targets are presented in Table 8.1 to allow treatments to better emulate natural site variability found in the NDT4. Actual targets for any given site will be further defined by the moisture gradient within the site series when prescriptions are completed.

Table 8.1. Initial Regional Restoration Targets

Ecosystem Component	Initial Tree Stocking Target (trees/hectare)*	Current Regional Distribution of Crown NDT4 (%)	Initial Regional Desired Distribution Target of Crown NDT4 (%)
Shrublands	0	5%	5%
Open Range	Less than 75	10%	15%
Open Forest	76 – 400	Combined Open & Managed Forest is 85%	39%
Managed Forest	400 – 5,000		41%

* The legal requirement for stocking targets is approved by the District Manager in an operational plan (i.e. SP or SMP).

(6) Old Growth Management Area contribution (in Strategy 2 above) and initial restoration targets (in Table 8.1) will be modified through time based on operational experience, long-term monitoring and better scientific knowledge.

- (7) Once stands have received initial ecosystem restoration treatment, they will become part of a long-term cycle of harvesting, spacing and prescribed burning that will optimize biodiversity, ecosystem health and resource flow.
- (8) Known information about red and blue-listed species or species of management concern should be incorporated and addressed in ecosystem restoration plans.
- (9) Ecosystem restoration strategies for open forest and open range will take precedence over ungulate winter range guidelines to provide in part for increased forage production. Current ungulate winter range guidelines will apply only within the managed forest ecosystem component. This strategy does not apply to UWR within the Boundary Forest District.
- (10) Christmas Tree Permits and Woodlot Licenses are considered to be part of the managed forest ecosystem component.
- (11) Ecosystem restoration plans will recognize the possibility that treatments may exacerbate the spread of noxious weeds and should incorporate mitigative control measures to pre-empt infestations on restored areas.
- (12) Innovative modifications to current government administrative processes to provide incentives and improve opportunities for restoration harvesting should be explored.
- (13) Forest health and wildfire suppression program objectives and activities should be integrated with ecosystem restoration planning to achieve mutual benefits such as ecosystem health and public safety.
- (14) Plans and priorities for ecosystem restoration treatments will be developed considering available fiscal and staffing resources.
- (15) Ministry of Forests and Ministry of Environment, Lands and Parks will prepare and review ecosystem restoration plans and apply the treatments prescribed in these plans in accordance with the strategies. The District Managers are responsible for approval of all related operational plans.
- (16) Licensees, other agencies and stakeholders will also be invited to review ecosystem restoration plans as they are prepared.
- (17) Licensees are to prepare SPs in accordance with the objectives and associated plans and participate in applying treatments as appropriate. Other agencies and stakeholders may also be responsible for applying treatments as approved by the District Manager.

9. Visuals:

- (1) For the purposes of this strategy, *Foreground* refers to a distance of up to one kilometre, *Midground* refers to a distance of between one and five kilometres, and *Background* refers to a distance of between five and twelve kilometres.

Table 9.1 - Landscape Design Intent By Class *

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

* Source: Visual Landscape Guidebook.

- (2) To manage landscapes for visual quality and timber supply, alternative silvicultural systems, (e.g. selection harvesting, shelterwood) should be used where possible and appropriate in known scenic areas.
- (3) Fire and insect or disease outbreak, and treatments to manage Fire-Maintained Ecosystems, may necessitate impact upon the visual quality in known scenic areas and not conform to Table 9.1. Visual design should seek to imitate natural shapes, textures and stand characteristics under these circumstances.
- (4) To improve cutblocks that exhibit poor visual design, timber harvest for purposes of visual rehabilitation should be applied where possible and appropriate in known scenic areas. Such actions may necessitate levels of visual disturbance that exceed Table 9.1.
- (5) All district managers in the Nelson Forest Region have agreed to establish Visual Quality Objectives in known scenic areas identified in this order.

- consistent with Table 9.1 by April 2003 (subject to availability of staff and resources). The district managers have also agreed that interim management of these areas will also conform to Table 9.1.
- (6) As per the delegation letter, changes to Map 9.1 of the HLP are to be approved by the regional manager, Ministry of Forests, the regional director, Minister of Environment Lands and Parks, and the regional manager, Ministry of Energy and Mines.