



## International Forest Products Limited Managing Scenic Values in TFL 38 Consistent with Forest Practices Code Impact Objectives

Landscapes Inventory and Analysis Review and  
Strategies to Reduce Adjacency Constraints in Scenic Areas

conducted by  
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### Executive Summary

The project was initiated to ensure that visual values in TFL 38 are managed according to the Ministry of Forests' strategy for managing scenic values consistent with Forest Practices Code Objectives.

The Strategy was initiated in response to the Chief Forester's report "Forest Practices Code - Timber Supply Analysis" which summarized the timber supply implications of introducing the Forest Practices Code. In order to meet the Government's stated 6% limit or reductions to the AAC, it was determined that visual resources would have to be managed differently so as to increase timber supply.

The analysis consists of two parts:

**Part A.** Using the Ministry of Forests' Strategy for Managing Visual Resources document, Addendum 1, as the framework, the 1994 Visual Landscape Inventory was reviewed to determine what gains could be made by changing VQO's where appropriate.

**Part B.** Once all possible gains were determined by reviewing the Visual Landscape Inventory data, consideration was made for implementation of one or more of the following strategies to further reduce adjacency constraints in scenic areas as outlined in the Strategy document:

- Reduce the time to achieve visually effective green-up (VEG)
- Improve Visual Landscape Design
- Encourage more use of alternative silviculture systems
- Utilize visual angle of incidence to better place cutblocks
- Carry out visual rehabilitation

The recent establishment of the Elaho/Clendenning Protected Area is significant to the analysis, as the Government has accepted the mitigation strategy proposed by the Lower Mainland Protected Areas Regional Public Advisory Committee which included zonation of the area below the confluence of the Elaho River and Sims Creek for Enhanced Resource Development, and above the confluence for General Resource Management. As well, the Protected Area will remain a key visual asset within the TFL, offering an important pristine forest viewing experience as well as becoming a focus of recreational activity in the Upper Elaho area of the TFL. The greatest portion of the TFL will always remain in its current visual condition as 78% is inoperable.

### Scenic Value / Use Matrix and VQO Review

Five Landscape Management Units (LMU's) were assessed which corresponded to the visually sensitive portions of the ecological landscape units already established:

- Ashlu
- Lower Elaho (south of Sims Creek confluence)
- Clendenning (including Sims Creek)
- Upper Elaho (north of Sims Creek confluence)
- Squamish River

Differentiation was possible in the TFL by landscape sensitivity rating. Highest concentrations of landscape sensitivity were found in the Squamish LMU and the Clendenning LMU, largely within the recommended protected area. Scenic value is generally moderate in other LMU's. Upper reaches of each travel corridor receive less use than lower portions.

As there is good road access through all major corridors, the TFL provides important access routes to alpine mountaineering destinations throughout the landbase. In relation to the neighboring Sea-to-Sky corridor, use is classed as low.

The combination of Scenic value and use indicated that the TFL 38 is generally Class 3, except for Class 2 in the Squamish and Clendenning LMU's. Both classes allow some opportunity for less restrictive VQO's.

The review determined recommended shifts towards less restrictive VQO's in 13% of Visual Landscape Units (VLU's), mainly to be compatible with Enhanced Resource Development zonation. These shifts are partially offset by a recommended shift towards more restrictive VQO's in 5% of all VLUs. A proposed shift of VLU's towards more restrictive VQO's was the result of the presence of the establishment of the Elaho/Clendenning Protected Area, and operability information which found several more units would have default retention as they were without operable forest. The effect on to timber supply of these recommended shifts should be determined during the timber supply review.

Where high sensitivity is concentrated, such as in the "Lower Squamish Design Unit", an integrated visual design approach (a visually-driven total chance plan) is proposed. As only 18% of this design unit has operable forest, a modification VQO is proposed for the operable component of this design unit to provide needed flexibility in design and operational considerations, and is consistent with Enhanced Resource Development zonation.

Newly determined operability limits have refined alpine boundaries that were used to set many of the upper visual retention areas in the 1994 Landscape Inventory. A number of these units will support a shift from Retention to Partial Retention to provide operational flexibility rather than hard-line upper boundaries. Some units with low percentages of operable forest were left unchanged in their restrictive VQO. Landscape design should consider all operable forest when operations are planned so to avoid any artificial banding imposed by visual landscape units extending from high alpine into operable forest.

Areas in the Recreation Inventory classified as visual ("V0") features were recommended as requiring Landscape Inventory before development occurs in those areas. Important high elevation viewing opportunities into the TFL as from 100 Lakes Plateau and Sigurd Lake area should also be considered when inventory is conducted for these areas.

Visual landscape design is seen as essential in all visually sensitive areas, even with modification VQO's.

#### Actions to Reduce Adjacency Constraints

The commitment of International Forest Products Limited to visual landscape design in visually sensitive areas within the TFL, combined with the flexibility afforded by the availability of helicopter harvesting, the rapidity of reforestation, and early achievement of VEG will support a shift from mid-point to upper range in each VQO for timber supply determination.

Visual Absorption Capability (VAC) appears to be somewhat underrated in the landscape inventory and should be examined in greater detail when landscape inventory is updated. The influence of VAC on timber supply should be assessed using an average VAC of medium which appears to be generally representative. Discontinuous forest, natural openings, past alterations and topographic variety all contribute to higher VAC than indicated by the steep slopes common in the TFL.

Initiation of a total resource design study, together with understanding provided by angle of incidence research in the TFL, will confirm the ability to harvest at enhanced levels while meeting the VQO's.

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## 1. Introduction

The project was initiated by International Forest Products Limited to ensure that visual values in TFL 38 are managed according to the Ministry of Forests' Strategy for Managing Scenic Values Consistent with Forest Practices Code Objectives (referred to as "the Strategy" in this analysis). The Strategy identified 2 key initiatives that were implemented for TFL 38. The first was to review existing Visual Landscape Inventory to determine the appropriateness of recommended Visual Quality Objectives (VQO's) (Part A of this analysis). Secondly, "once all possible gains have been derived by reviewing the Visual Landscape Inventory data", encouragement was given to implementing "strategies to further reduce adjacency constraints in scenic areas" (Part B of this analysis).

Coinciding with this review, the Provincial Government established the 29,800 ha. Elaho/Clelndenning Protected Area<sup>1</sup> within the boundaries of TFL 38. The Protected Area assures the presence of easily accessible, pristine forested landscapes within the TFL, viewed along the Elaho road corridor, within the Clelndenning Creek drainage, and from surrounding upland back-country areas. It also has the likely potential to redirect and focus recreational activity towards the upper Elaho/Clelndenning area. The decision added impetus to the review of TFL 38 as the Government has accepted the mitigation strategy proposed by the Regional Public Advisory Committee (RPAC)<sup>2</sup> to offset the impacts of the Protected Area.

## 2. Background

### Strategy for Managing Scenic Values Consistent with Forest Practices Code Objectives

The Strategy was initiated in response to the Chief Forester's report "Forest Practices Code - Timber Supply Analysis" which summarized the timber supply implications of introducing the Forest Practices Code. In order to meet the Government's stated 6% limit of reductions to the AAC, it was determined that visual resources would have to be managed differently so as to increase timber supply. As stated in the introduction to the Strategy document, the "primary emphasis of this strategy is to actively harvest within scenic areas with VQO's while maintaining scenic values".

### Statement of Management Objectives, Options and Procedures (SMOOP)

Implementation of the Strategy's procedures in TFL 38 was committed to by International Forest Products Limited in the Statement of Management Objectives, Options and Procedures (SMOOP) for Management Plan No. 8, Tree Farm Licence No. 38<sup>3</sup>. In preparation of the SMOOP, International Forest Products Limited adopted the recommendations of the Ministry of Forests, Vancouver Forest Region, which were provided in a letter dated July 12, 1996. The commitments with regard to visual resource management in the TFL were:

<sup>1</sup> Ministry of Forests, 1996. Strategy for Managing Visual Resources Consistent with Code Objectives.

<sup>2</sup> Office of the Premier News Release, October 28, 1996.

<sup>3</sup> Land Use Coordination Office, October 1996. Background: Completing the Lower Mainland Protected Areas Strategy.

<sup>4</sup> SMOOP, approved August 20, 1996. Final Revision September, 1996.

### Opportunity:

To plan and manage activities within the TFL in a manner responsive to the visual resources of scenic areas as identified in the Landscape Inventory.

### Action:

- Identify and prioritize scenic corridors within the TFL in consideration of recreation use intensity and scenic values;
- Assess the Recommended Visual Quality Objectives (RVQO) of the Landscape Inventory;
- Develop visual landscape management strategies for each landscape unit in the TFL that are consistent with visual landscape design principles and processes as presented in the Visual Landscape Design Training Manual;<sup>5</sup>
- Explore the potential for incorporating the principles of integrated visual design in harvest planning in scenic areas in order to maximize long term harvest levels while still maintaining scenic area objectives;
- Review the existing visual conditions in the TFL and develop a rehabilitation strategy for existing cut blocks as a potential means of improving the existing visual quality on previously harvested areas;
- Identify opportunities to increase availability of volume in scenic areas through use of innovative management practices;
- Develop strategies to reduce adjacency constraints in scenic areas;
- Explore how to develop a visual management monitoring program.

### Elaho/Clelndenning Protected Area Mitigation Strategy

The Regional Public Advisory Committee (RPAC) proposed a mitigation strategy to offset the impacts of Protected Areas within the Lower Mainland in their 1996 report<sup>6</sup>. As accepted by Government<sup>7</sup>, the mitigation strategy for Lower Mainland Protected Areas is that "to meet the needs of communities and sustain resource jobs":

- Forest Renewal BC has approved a \$5 million funding envelope for forest workers in the Lower Mainland. A variety of projects will be considered for funding, including those concerned with training, enhancing timber supply and watershed restoration.
- Impacts to forest operations will be minimized by careful boundary setting.
- The government will work cooperatively with industry to ensure there is no disruption in the short-term timber supply while ensuring the requirements of the Forest Practices Code continue to be met.

<sup>5</sup> Ministry of Forests, 1994. Visual Landscape Design Training Manual.

<sup>6</sup> Lower Mainland Protected Areas Regional Public Advisory Committee, 1996. Recommendations for Finalizing the Protected Areas Strategy in the Lower Mainland.

<sup>7</sup> Land Use Coordination Office, October 1996. Background: Completing the Lower Mainland Protected Areas Strategy.

- Any areas of working forest outside the protected areas will be designated as Forest Land Reserve subsequent to Land and Resource Management Planning (LRMP) processes throughout the region, which will provide a secure land base for forestry activities.

The Committee further recommended that "the impact of Recommended Protected Areas on jobs and on both the short and long term level of timber harvesting in the region should be mitigated against by the following measures wherever possible...":

- designating portions/areas of each of the TFL's and TSA's within the region as high intensity timber emphasis zones - in agreeing to this it is recognized that portions/areas of the TFL's and TSA's will also be designated special management zones;
- adjusting (e.g., relaxing within the parameters permitted by the Forest Practices Code) VCO's where appropriate;
- the extent to which this is possible will vary throughout the region;
- the extent to which this is possible in any given area within the region needs to be addressed at a larger scale than the entire region recognizing that some areas have high Visual sensitivity (e.g. the Whistler Corridor);
- adjusting where appropriate (e.g. relaxing within the parameters permitted by the Forest Practices Code) adjacency ("green up") rules.

The Committee also recommended that there should be no automatic designation of areas immediately surrounding protected areas as special resource management zones:

- each area is to be considered on its individual merits;
  - where special management zones are established adjacent to protected areas, these are not to be managed as "de facto" protected areas - industrial activity including forestry and mining may take place in these areas so long as it takes place in accordance with the management objectives established for that zone....
- In recommending the establishment of the Clendenning protected area the Committee specifically recommended that:
- the area of TFL 38 south of the confluence of the Sims Creek and the Elaho River should be designated as a timber emphasis zone;
  - there be no special resource management zone immediately adjacent to the protected area.

TFL 38 has taken current guidance from the RPAC recommendations for zonation noted above by implementing "Enhanced Resource Development" (high intensity) for the area below the confluence of Sims/Elaho, and "General Resource Management" (integrated resource management) for the area above the confluence. The Government's intention to begin a Sea-to-Sky Land and Resource Management Plan (LRMP) in 1997 will focus on identifying these resource development zones. As the TFL is included in the Sea-to-Sky LRMP area, zonation within the TFL will be consistent with the LRMP.

### 3. Review of Information

The review utilized the following information provided by International Forest Products Limited:

- Landscape inventory, report, photo panorama collection<sup>8</sup>
- Recreation inventory<sup>9</sup>, Recreation Analysis Report<sup>10</sup>
- forest cover overview map
- operability maps
- combined 1:65,000 visual landscape, topography and operability map

The overview analysis was conducted utilizing the combined 1:65 000 scale map provided by Interfor, which contained visual landscape units and their ratings, topography and was colour themed for operable forest which included conventional, helicopter and marginal forest types.

Recreation feature inventory polygons were provided on a clear acetate as an overlay to the 1:65,000 landscape/operability map with management class and significance rating indicated by cross-hatching. The overlay and the related descriptions of the polygons in the accompanying Recreation inventory report provided understanding of the relationships between the recreation and visual landscape values of the TFL.

A Soo TSA Recreation Management Strategy and Analysis Report<sup>11</sup> was prepared this year for the Squamish Forest District by Geoscape consultants. While limited to the Timber Supply Area, relationships of the TFL in the supply of recreation opportunities were noted, and provided some guidance when considering elevated viewing from recreation feature areas including the Sigurd Lake area and 100 Lakes Plateau area that were brought into consideration in this analysis. Findings were considered in this assessment.

#### 3.1 Visual Landscape Inventory

The 1994 Visual Landscape Inventory identified and rated landscapes seen along the Ashlu, Elaho and Squamish mainlines to the extent of road development in 1994. The Recreation Inventory provided additional confirmation of visual values as "V" features. Most "V" features duplicated those identified in the Landscape Inventory and would not provide additional restrictiveness in timber supply analysis beyond what was indicated in the Landscape Inventory.

Individual components of the Landscape Inventory were assessed to some extent, however as this was an overview assessment, an inquiry was not made into the specific adequacy of each rating. The analysis chose to examine recommended VQO relationships on a larger, zonal scale which provided guidance for individual adjustment recommendations. Comment was made on general conditions, including visual absorption capability in the analysis, which was supported by review of landscape character displayed in panoramic photography accompanying the inventory.

<sup>8</sup> Recreation Resources Limited, 1994, Landscape Inventory and Analysis, TFL 38, Revised 1996

<sup>9</sup> Recreation Resources Limited, 1994, Recreation inventory, TFL 38, Revised 1996

<sup>10</sup> Recreation Resources Limited, 1996, Recreation Analysis and Management Strategy Report, TFL 38

<sup>11</sup> Ministry of Forests, 1996, Soo Timber Supply Area Recreation Management Strategy and Analysis Report.

The categories of Landscape Inventory ratings were:

- Landscape Sensitivity Rating (LSR)
- Visual Absorption Capability (VAC)
- Existing Visual Condition (EVC)
- Visual Quality Objective (VQO)

### 3.1.1 Landscape Sensitivity Rating (LSR)

Landscape Sensitivity Rating is considered to be the major "driver" of the recommended VQO. For example, steep focal scenic features, viewed by many people, or by fewer with a high degree of concern, may be rated highly and may receive a restrictive VQO. High landform prominence often resulted in a high sensitivity rating in current landscape inventories, regardless of use intensity or concern. Newly released Ministry of Forests landscape classification procedures<sup>12</sup> tend to give more weight to recreational use as an influence, such that less seen landscapes, though prominent, may receive lower ratings if the use element is not significant. This influence was further emphasized in the first step of the Ministry's Strategy procedures upon which this analysis is based, and therefore was a consideration in this review.

### 3.1.2 Visual Absorption Capability

The second element of the Landscape Inventory, Visual Absorption Capability (VAC), is important to operational design considerations and has an influence in timber supply determination. The VAC has an important influence in timber supply determination<sup>13</sup> in that it is used to determine the percent alteration range within each VQO category, with low VAC requiring the lowest in the range while high VAC supports the highest in the range.

In the inventory process, slope is considered a strong determinant of VAC. As coastal mountainous landforms typically fall in the 60% plus range of slope, they have often defaulted to low VAC. While slope is indeed significant to how apparent any activity will be, it is but one of the criteria. Vegetative, topographic, and exposed rock patterns provide much of the variety and diversity in TFL 38. The forest cover was noted in the inventory to be rarely uniform as it is broken by rock outcrops, non-forested areas, avalanche chutes and regenerating cutblocks. Increasingly, new harvesting techniques such as helicopter logging and skyline operations now being employed in the TFL can work with the detailed VAC. As these considerations can be utilized in design of alterations, a general assessment of VAC was made in this review.

### 3.1.3 Existing Visual Condition and Visually Effective Greenup

The existing visual condition (EVC) is a measure of degree of alteration from the natural-appearing landscape, described in terms similar to the VQO. The EVC changes over the course of time from altered to natural-appearing as regrowth of the forest occurs. When altered areas have regrowth that is sufficient to cover bare ground and stumps, and can be perceived by the average viewer as newly established forest, the condition is called, visually effective greenup (VEG). On average VEG is achieved sufficiently at a 5 metre height of regrowth. Alterations can more readily blend over time if they are well-designed and have not overwintered the detailed characteristics of the landscape which give it visual absorption capability.

As noted in the Landscape Inventory, large openings do not easily blend and may remain altered looking for a greater period of time. Roads are also visual elements that can extend the VEG period. Rehabilitation of roads and cutblock edges can hasten the achievement of VEG. The Strategy considers rehabilitation, and is addressed in Part B of this report.

Visually Effective Greenup has an important influence on timber supply and operational availability. Site influences, slope, viewing regime and management decisions will affect specific VEG requirements. The Strategy document provides guidance on ways to reduce time to achieve VEG. These are addressed in Part B of this report.

### 3.1.4 Visual Quality Objectives

Visual Quality Objectives are recommended in the Landscape Inventory and Analysis. These were approved by the District Manager, Squamish Forest District, in 1995. The VQO of Modification was advanced as the main VQO within the operable forest area "based on the assumption that landscape design, i.e. use of existing landscape patterns and shapes, dispersion of openings, and the management of VEG cover, are necessary elements for this level of VQO". The inventory report further noted that TFL 38 is visibly a "working forest.... the landscapes represented make up a mosaic of existing conditions". The "large scale of the entire area" was seen as the "greatest aid in achieving VQO's".

The Visual Landscape Analysis Worksheet provides an assessment of recommended shifts in VQO's based on the Scenic Value / Use Matrix influences for the TFL overall and with some variation within management units (Appendix 1). As the TFL landscape is to be managed for "Enhanced Resource Development" south of the Elaho/Sims confluence, and "General Resource Development" above the confluence, specific shifts to less restrictive VQO's were encouraged within these zones.

The Strategy document presents new perspective, percent alteration standards for achieving Visual Quality Objectives which resulted from research studies<sup>14</sup>. When imposed, these will result in a significant reduction in alteration limits currently in use within the Vancouver Forest Region:

VQO	Percent VLU Alteration Limits in Perspective View	
	Current	New
Retention	0-5	0-1.5
Partial Retention	6-15	0.9-9.9
Modification	17-30	5.6-21.4
Maximum Modification	30-50	11.6-22.6

Improved abilities in visual landscape design, combined with harvesting techniques that have greater flexibility such as helicopter operations, will encourage greater compatibility in the landscape for a given degree of alteration. Alternative silviculture systems can be applied which further mitigate visual impacts. The potential for such treatments in TFL 38 are discussed in Part B of this report.

<sup>14</sup> Ministry of Forests, 1996. Clearcutting and Visual Quality. A Public Perception Study: Summary Report.

<sup>12</sup> Ministry of Forests, November, 1996. Visual Landscape Inventory: Procedures and Standards (Draft).  
<sup>13</sup> Ministry of Forests. Factoring Recreation into Timber Supply Procedures.

### 3.2 Recreation Inventory

The Recreation Inventory indicated visual features ("V" features) which provided confirmation of visual values determined in Landscape Inventory. These "V" features do not provide additional restrictiveness in timber supply analysis beyond what was indicated in the Landscape Inventory. They commonly received ratings of C1 or C2 which suggested moderate capability to attract recreation use, local significance, and either special management considerations to protect or maintain recreation values and consultation with Ministry of Forests recreation staff prior to resource development (Management Class 1) or normal forest management practices with consultation desirable (Management Class 2).

The Recreation Inventory further determined landscapes recommended for future Visual Landscape Inventory prior to forest development in the area. These were classified as "VO" recreation features. These were commonly rated C1, although some polygons received higher values. The VO's require attention beyond the scope of this analysis.

The Recreation Analysis noted upland, or elevated, viewing opportunities from mountaineering routes into the TFL towards the valley forests as a recreational benefit. The Recreation Analysis further emphasized managing landscape quality for rafters and other river users and alpine viewing experiences as they related to the commercial recreation and tourism appeal. The Landscape Inventory report related that Recreation survey responses (for TFL 38) indicated that at present, commercial rafting companies find the visual impact of logging to be tolerable, but added that "conservative landscape management along the river corridors, particularly along the navigable portions, is recommended".

## 4. Analysis Procedures

The analysis consists of two parts:

**Part A.** Using the Ministry of Forests' Strategy for Managing Visual Resources document, Addendum I, as the framework, the 1994 Visual Landscape Inventory was reviewed to determine what gains could be made by changing VQO's where appropriate.

**Part B.** Once all possible gains were determined by reviewing the Visual Landscape Inventory data, consideration was made for implementation of one or more of the following strategies to further reduce adjacency constraints in scenic areas as outlined in the Strategy document:

- Reduce the time to achieve visually effective green-up (VEG)
- Improve Visual Landscape Design
- Encourage more use of alternative silviculture systems
- Utilize visual angle of incidence to better place cutblocks
- Carry out visual rehabilitation

## Part A Landscape Inventory and Analysis Review

## 5. Scenic Value / Use Matrix

Landscape Inventory and Analysis Review consists of two exercises: a look at scenic value and use, and review of VQO's in relation to scenic value and use. As a first step, the review considered scenic values, recreational use and viewing opportunity relative to timber volumes in specific Landscape Inventory zones. For consistency with other planning purposes, the TFL was divided into 5 broad Landscape Management Units (LMU's). The LMU's correspond to the ecological landscape units established for the TFL. These are:

- Ashlu
- Lower Elaho (south of Sims Creek confluence)
- Clendenning (including Sims Creek)
- Upper Elaho (north of Sims Creek confluence)
- Squamish River

The scenic value/use matrix provided in Addendum 1 of the Procedures document was used to rank each LMU into one of three classes for re-evaluation. The document suggests that Class 1 areas would have the least potential gain while Class 3 areas would have the most potential gain:

	Scenic Value		
	High	Moderate	Low
High Use	Class 1	Class 1	Class 2
Moderate Use	Class 1	Class 2	Class 3
Low Use	Class 2	Class 3	Class 3

- Class 1 areas would have generally high use, high scenic values and high viewing opportunities
- Class 2 areas would have moderate use, moderate scenic values and moderate viewing opportunities
- Class 3 areas would have low use, low scenic values and low viewing opportunities.

The Visual Landscape Inventory provided understanding as to the location, structure and character of visually sensitive landscapes and their scenic value. The Recreation Inventory and report provided insight into recreational interest and user concentrations. This information was developed in further detail in the Recreation Analysis and Management Strategy Report.

## 5.1 Scenic Value and Viewing Opportunity

The Strategy document procedures differentiate locally important scenic areas (e.g. lake shores) from major highway corridors, and major corridors from internationally significant scenic features (e.g. Inside Passage). The Whistler (Sea-to-Sky Corridor) was rated highly in the Protected Area report. The Soa TSA Recreation Management Strategy identified the Sea-to-Sky corridor as well as the Birkenhead, Pemberton Valley and Lillooet Lake corridors as "scenic corridors".

The Strategy document provided neither criteria nor methodology for determination of scenic value. The TFL presents spectacular views from each mainline and from upland viewpoints. Scenic value is disbursed throughout the TFL. High scenic value can be equated to high landscape sensitivity rating determined in the Landscape Inventory.

The 1994 Landscape Inventory reported that 33% of the total landbase of the TFL was visually sensitive. The inventory reported 28% of the visual landbase as having high landscape sensitivity, 68% moderate and 4% low sensitivity rating. The Recreation Analysis reported that the overall landscape quality in these (the visually sensitive) areas is very high (79% of the landscapes having Existing Visual Condition of Partial Retention or higher).

Viewing opportunity influences scenic value. Viewpoints selected in the inventory were chosen from recreation sites and openings along roadways that offered expansive views. Less expansive views from recreation sites and other locations where use is of long duration can be as significant as broader views seen while driving along the roadways.

Additional scenic landscapes were determined in the Recreation Inventory and suggested for future Landscape Inventory. These were located in the Upper Elaho, Clendenning, Sims, and side drainages of the Ashlu.

By Landscape Management Unit, high Landscape Sensitivity occurred in the greatest number of VLU's Squamish LMU (16), followed by the Ashlu LMU (10) and the Clendenning (8). However, as a proportion of total LMU's, high sensitivity was predominant in the Clendenning LMU. The upper and Lower Elaho were strongly moderate.

LMU Landscape Sensitivity Ratings, as percent of number of Visual Landscape Units

LMU	High	Moderate	Low	Total
Ashlu	10 (26%)	28 (68%)	2 (6%)	38
Lower Elaho	1 (3%)	27 (80%)	2 (7%)	30
Upper Elaho	8 (8%)	9 (75%)	2 (17%)	12
Clendenning	8 (53%)	7 (47%)	0 (0%)	15
Squamish River	16 (31%)	32 (63%)	3 (6%)	51
Total	36 (25%)	101 (69%)	9 (6%)	146

### 5.1.1 Ashlu Landscape Management Unit Scenic Values

The Ashlu LMU is an attractive managed forest landscape. In the Ashlu LMU, all highly sensitive units were alpine/near-alpine units with little or no operable forest value with the exception of two units lower on the mountain slopes in the upper middle portion of the valley (VLU T23 and VLU 124). Expansive viewing opportunities were noted in the Ashlu above Mile 26.

The Recreation Features Inventory identified several side drainages as having un-rated visual (VO) values (Falk, Tatlow and Pokosha Creeks), and recommended visual landscape inventory be conducted for those areas prior to resource development. The ASHLU LMU is entirely within the Enhanced Resource Development (ERD) zone, though specific sensitive features may require special management.

### 5.1.2 Lower Elaho Landscape Management Unit Scenic Values

In the Lower Elaho LMU, moderate ratings prevailed in the lower portion with only 1 unit having high landscape sensitivity rating, VLU 206 (Ashlu Mountain), which is alpine with no operable forest volume.



It was noted in the Landscape Inventory that views in the Elaho travel corridor are expansive beyond Mile 43 "due to more recent logging, wider valley width and increased road elevation". The Lower Elaho falls within the Enhanced Resource Development (ERD) zone for management intensity.

### 5.1.3 Clendenning Landscape Management Unit Scenic Values

The Clendenning LMU has the greatest concentration of high landscape sensitivity in the TFL as a proportion of Visual Landscape Units in each LMU, and is readily experienced from the Elaho mainline. The LMU includes Sims Creek. The confluence of Elaho and Sims Creek is the southerly extent of the Elaho/Clendenning Protected Area. Sims Creek itself lays outside of the boundary. The confluence is also the dividing line for management intensity, with areas below the confluence, including the Sims Creek drainage, assigned "Enhanced Resource Development" (ERD) and, above, "General Resource Management" (GRM).

All but one (VLU 223) of the 8 highly sensitive units in this LMU are located totally or mainly within the Protected Area. A portion of VLU 235 lays outside the protected area, extending into the Upper Elaho LMU. The Recreation Inventory placed VO (Visual Feature) ratings on much of the operable forest within Sims Creek and Clendenning Creek suggesting visual landscape inventory be conducted prior to resource development. As Sims Creek is within the Enhanced Resource Development zone, a general VOO of Modification can be anticipated, subject to identification of sensitive features that could require special management.

### 5.1.4 Upper Elaho Landscape Management Unit Scenic Values

The Upper Elaho valley broadens beyond the Sims Creek confluence. The unit is roaded for only half its extent. The Elaho mainline parallels the eastern side of the river, providing views towards the adjacent Elaho/Clendenning Protected Area. Only one VLU has high visual sensitivity (VLU 248), located in alpine on the east side of the river near the Sims Creek confluence. The LMU falls within General Resource Management (GRM) zonation.

The recreation inventory recorded significant areas of VO visual features in the Upper Elaho. These areas are recommended for visual landscape inventory prior to resource development. The GRM zonation requires that the general provisions for integrated resource management and Forest Practices Code will apply, including management of scenic values.

### 5.1.5 Squamish Landscape Management Unit Scenic Values

The Squamish LMU has the greatest number of highly sensitive visual landscape units, though more dispersed than the Clendenning LMU. High value areas were concentrated along the west side of the lower corridor below the confluence of the Elaho River. VLUs 306-312 and along the mountain peaks and their alpine fringes along the eastern edge of the TFL. The lower west side units create an easily accessed scenic vista from the Squamish River and the mainline. This area is a good candidate for integrated landscape planning as the area also has considerable timber values. The entire unit is within the Enhanced Resource Management zonation.

There was one riverside unit (VLU 335) with high rating. The remaining high sensitivity ratings were applied to alpine/near-alpine units along the eastern boundary of the TFL with some timber values but which contribute much of the high quality scenic character and viewing opportunity in the Squamish River Valley.

These were VLU's 325 (Table Mountain), 327 (Ring Mtn.), 331 (Powder Mtn. traverse), 332 (Mt. Cayley access route, 337 (Mt. Cayley knoll), 338-341 (Mt. Fee - Cypress Peak), and 346 (alpine at the head of Shovelnose Creek). Viewing opportunity was said to be expansive in the Squamish travel corridor above Mile 37.

### 5.1.6 Summary - Landscape Management Unit Scenic Values

In summary, there are three concentrations of high landscape sensitivity as mentioned in the analysis above - lower Squamish west side, Squamish east side alpine, and the Clendenning LMU (west side of the Elaho) in the proposed protected area. Scattered high scenic values also exist within each corridor as denoted by high landscape sensitivity in individual visual landscape units. The Recreation Resource Inventory identified further areas of un-rated visual sensitivity recommended for visual landscape inventory prior to resource development. The greatest extent of the TFL was considered to be moderate as determined in the Landscape Inventory sensitivity ratings.

In a regional context, and relative to the nearby Sea-to-Sky scenic corridor, scenic value in TFL 38 is moderate overall, varying with features, namely mountain peaks and glaciers attracting specific attention where there is viewing opportunity. Scenic value in the TFL is common to the Region, and more readily and frequently accessed outside TFL 38 along nearby paved main travel corridors.

## 5.2 Use

The Recreation Analysis and Management Strategy Report for TFL 38 noted that "TFL 38 is off any major travel corridor, but lays at the doorstep of the lower mainland population" and that "The TFL is within the Vancouver Forest Region which accounts for 52% of all outdoor recreation use in British Columbia". The primary recreation attraction areas of Garibaldi Provincial Park and the Resort Municipality of Whistler are nearby. The GVRD is expected to double in population by the year 2030 with the likelihood of a substantial increase in use of the TFL for recreation.

The Recreation Analysis Report indicates growing interest in mountaineering activities, high demand for large back-country or wilderness areas, a growing interest in photography and nature study, and off-road and four wheel driving continue to be popular. The extensive backcountry areas "are well known to outdoor recreationists and have substantial capacity to support increased use". Commercial recreation including river rafting, kayaking, angling, snow-mobiling and guiding for general recreation trips is "still on a relatively small scale". Traffic counts have not been conducted to indicate current levels of recreational use or growth in recreational traffic along the mainlines. The Recreation Analysis noted that increases are reported by International Forest Products Limited to be "substantial". Use varies by accessibility and feature attractions. The upper reaches of each corridor receive less use than lower portions, but provide important access routes to the alpine.

The Recreation Analysis Report projected an estimated 190,000 people per year could visit the TFL during weekends by the year 2030. The same analysis suggested that "while recreation resources available in TFL 38 are more than adequate to sustain current and projected recreation use, implementing intensive recreation and landscape management could ensure the quality of recreation experiences are available for future use".

<sup>15</sup> Ministry of Forests, 1991. Outdoor Recreation Survey 1989-1990: How British Columbians Use and Value their Public Forest Lands for Recreation.

LMU Scenic Value/Use Ratings

LMU	Scenic Value	Use	Class
Ashlu	M	L	3
Lower Elaho (south of Sims Creek confluence)	M	L	3
Upper Elaho (north of Sims Creek confluence)	M	L	3
Clendenning	M-H	L	2
Squamish River	M-H	L	2

By LMU, the greatest opportunity to increase timber supply appears to exist in the Ashlu and Lower and Upper Elaho. The scenic value/use characteristics within specific Landscape Management Units in TFL 38 vary to some extent. For example, users concentrations will be greater in the lower part of each corridor, and where there are recreation sites. Scenic values are concentrated in parts of the Squamish LMU and in the Clendenning LMU. Use in and around the Elaho/Clendenning Protected Area can be expected to increase. High value scenery is incorporated in the protected area. The Sims Creek drainage, while within the Clendenning LMU, was largely outside of the landscape inventory and therefore not part of this zonation.

All LMU's, including the Sims Creek portion of the Clendenning LMU, offer some potential to increase timber supply, with specific recommended adjustments determined in the visual landscape unit review which follows.

**6. Visual Landscape Unit Review**

Once each Landscape Management Unit was ranked for its potential to increase timber supply, each landscape unit was evaluated for potential to increase timber supply. Areas of low or moderate sensitivity were suggested in the procedures as providing the most opportunity for gain. A Visual Landscape Analysis Worksheet (Appendix 2), modified to fit the information available, was initiated covering all visual landscape units identified in the 1994 inventory. The Worksheet contains the label of each landscape unit with its four ratings, the area of each unit, the percentage of the area within each unit with operable forest, recommended adjustment to the VQO, if any, and comments or rationale, including influence of recreation features and activities.

**6.1 Visual Landscape Inventory Ratings**

**6.1.1 Landscape Sensitivity Rating (LSR)**

The visual landscape is one-third the total landscape within of the TFL<sup>16</sup>. The 1994 Landscape Inventory determined that 28% of the visual landscape of TFL 38 had high landscape sensitivity, 66% moderate, and 4% low sensitivity. The predominance of high to moderate sensitivity determined in the 1994 inventory suggests that biophysical characteristics were a major determinant of sensitivity as use is minor relative to nearby major travel corridors exhibiting similar landscape features. Newly released evaluation procedures<sup>17</sup> for Visual Landscape Inventory would likely shift the Landscape Sensitivity Rating towards a lower average (i.e. moderate) sensitivity, based on the relatively low use and concern factor.

<sup>16</sup> As summarized in the Recreation Analysis and Management Strategy Report, page 28.

<sup>17</sup> Ministry of Forests, November, 1996. Visual Landscape Inventory: Procedures and Standards (Draft).

**5.2.1 Ashlu LMU - Use**

The Landscape inventory report found that the Ashlu mainline was a "less used" recreational travel corridor due to its steeper gradient and narrowness. Significant use occurs to mile 1 recreation site. Rafting is limited also by the gradient, narrow canyons and obstructions.

**5.2.2 Elaho - Use**

The Elaho mainline is passable along its entire 40 km length. The Elaho River is used for rafting from Mile 40 to the confluence with the Squamish River. Several commercial river rafting operations use the TFL from Mile 40 on the Elaho down to Mile 21 on the Squamish River. Greater interest in the Upper Elaho / Clendenning can be anticipated as awareness of the Protected Area increases.

**5.2.3 Clendenning - Use**

Greater use can be anticipated as the area becomes known. The unit itself is un-roaded though access to the unit is provided along the Elaho mainline. As the Clendenning drainage is within the Protected Area, no road access will be developed, however future development within the Sims Creek drainage can benefit recreational access. Current use can be considered similar to the Upper Elaho.

**5.2.4 Squamish - Use**

The Squamish mainline, 42 km in length, is passable by two wheel drive vehicles. The section receiving the heaviest use is the lower portion (Mile 20 to Mile 37). After this section the road is narrower and the river is not suitable for angling or rafting.

**5.3 Scenic Value/Use Ranking**

In the absence of actual use numbers, but not to diminish the significance and interest in the recreational attractions offered in TFL 38, use is assumed to be low in the regional context, and relative to the nearby Sea-to-Sky scenic corridor, Whistler, and Garibaldi Provincial Park. Use varies with access and features in each Landscape Management Unit. Scenic value was generally moderate, based on visual landscape sensitivity rating. No actual guidance was provided to differentiate use or scenic value.

In consideration of the overall moderate scenic value and overall low use within the regional context, the TFL was assigned a recommended Class.3 matrix rating. This rating allows the most opportunity on a regional basis for adjustment of VQO ratings where the presence of timber volumes would produce gains.

### 6.1.2 Visual Absorption Capability

The 1994 Landscape Inventory determined that 3% of the visual landbase of TFL 38 had high VAC, 56% medium VAC, and 41% low VAC.

An analysis of detailed features in the TFL suggests that while steep slopes readily display any alteration to the viewers, the high degree of diversity inherent in both the altered landscapes and natural landscapes provide an overall VAC that would be moderate, rather than the moderate to low average rating of the inventory. It is recommended, therefore, that the effect of this average medium rating be determined in Timber Supply Review. The VAC has an important influence in timber supply determination in that it is used to determine the percent alteration within the range provided in each VCO category, with low VAC requiring the lowest in the range while high VAC supports the highest in the range.<sup>18</sup> Variations exist across the Visual Landscape Units. Individual units were not reviewed in this analysis. A full review of VAC is advanced as a consideration in Part B as it influences adjacency constraints.

### 6.1.3 Existing Visual Condition and Visually Effective Greenup

Only 22% of the TFL is operable forest. In the 1994 inventory, it was determined that 74% of the visible landbase of TFL 38 was visually retained, 5% was partially retained, and 21% was modified to a greater or lesser extent. The Recreation Analysis reported that the "overall landscape quality in these (the visually sensitive) areas is very high". There is abundant preservation in upland areas, if only by default, throughout the TFL. The EVC changes over the course of time from altered to natural-appearing as regrowth of the forest occurs. When altered areas have regrowth that is sufficient to cover bare ground and stumps, and can be perceived by the average viewer as newly established forest, the condition is called visually effective greenup (VEG). VEG was noted in the Recreation Analysis to occur at minimum 14 years, and/or a minimum height of 3 metres.

### 6.1.4 Visual Quality Objectives

Visual Quality Objectives were approved by the District Manager, Squamish Forest District, in 1995. Of the visually sensitive landbase in the TFL, 27% is assigned Retention, 21% Partial Retention, and 52% Modification.

In the 1994 Visual Landscape Inventory report it was stated that, for the Elaho and Ashlu mainline corridors, Retention VCO's were assigned to alpine, non-forested landscapes, Modification forested, with Partial Retention generally assigned to forested landscapes that are still "pristine" or "attractive". It was not clear if the same criteria were applied to the Squamish corridor. The criteria for selecting Retention in the inventory appears to have been influenced by operability limits when defining alpine or non-forest types.

Selecting Partial Retention based on pristine qualities of the forest may have given precedence to the existing visual conditions when recommending VCO's. Operability is not normally an indicator of sensitivity. Existing condition may contribute to visual sensitivity, but as one of many factors leading to an overall rating for each unit that could make "pristine landscapes" comparable in rating to already altered ones.

A review of visual landscape units in relation to operable forest limits revealed a number of units at least partially within operable forest with a Retention VCO. Analysis of these units in relation to neighboring units and with overlying recreation feature polygons determined a number of VLU's where a shift would be appropriate. Caution is required as often the upper reaches of operable forest may have specific scenic or recreation features, and may have slower regeneration potential which could extend the VEG period. Conversely, however, inclusion of these upper forest types can provide for better design opportunity, avoiding arbitrary upper straight edges in current or proposed openings.

## 6.2 Interpretation of Visual Landscape Inventory

The Protected Area portion of the Clendenning LMU will keep the scenic landscape in its current pristine condition. Significant Visual Landscape Units seen from the upper Elaho mainline are included in the Protected Area. The visual condition of these units will remain Preservation. The VCO's of Modification and Partial Retention established for units within the Protected Area, prior to its designation, could be transferred to relieve current restrictions in units outside the Protected Area, or to areas currently un-rated but identified as visual feature areas (VO's).

The establishment of the Elaho/Clendenning Protected Area brought with it the Government's acceptance of RPAT recommendations to offset its impact on timber supply by designating the area south of the Elaho/Sims Creek confluence as an "Enhanced Resource Development" zone. Based on this zoning, and on the scenic value/use matrix derived in this analysis, the broad VCO for each of the Ashlu, the Lower Elaho, the Sims Creek portion of the Clendenning, and the Squamish LMU can appropriately be Modification. Zonation of the Upper Elaho as General Resource Management can also accept Modification, subject to refinement related to integrated resource management considerations.

The VCO of Modification has significant design obligations and will bring increased restriction as the Ministry of Forests imposes reductions in percent alteration limits in perspective view. Modification is a VCO that provides opportunity for implementing Visual Landscape Design, exploring the principles of integrated visual design (usually driven total chance planning), and to identify opportunities to increase availability of volume in scenic areas to meet the Chief Forester's code impact objectives.

Retention VCO visual landscape units were frequently identified within alpine, non-productive forest. Review of operability in relation to these retention VCO landscape units found some units with operable forest often directly adjacent to units with Modification or Partial Retention VCO's. The significance of recreation features was considered before a shift was recommended. The Recreation Inventory assigns high value to the upper ends of drainages where there are found upland open forests, cirques and tarns. A few polygons with "V" features were of greater significance and restrictiveness such as an accessible old growth forest patch in map sheet 092.003 (unit 077) or a scenic glacier (092.014, unit 017). The Recreation Inventory further determined landscapes recommended for future Visual Landscape Inventory prior to forest development in the area.

<sup>18</sup> Ministry of Forests, Factoring Recreation into Timber Supply Procedures.

These were classified as "V0" recreation features. These were commonly rated C1, although some polygons received higher values (e.g. 092C083, unit 007 - 80 open forest; others included glaciers, cirques and avalanche tracks). It is important to note that the Clendenning Creek drainage contains V0 polygons throughout its length. Other concentrations were found in Upper Elaho, Sims Creek, and within small side drainages of the Ashlu. With visual preservation now assured within the Protected Area, a significant zone of V0's in the Clendenning drainage has been accommodated. The V0's in other areas will require consideration beyond the scope of this analysis.

The Soo TSA Recreation Management Strategy also indicated viewing considerations from several feature areas including Squid Lake and 100 Lakes Plateau. The 100 Lakes Plateau area provides elevated panoramic viewing opportunities towards the slopes of the Protected Area and the broad valley bottom of the Upper Elaho above Sims Creek. Future road development in the Upper Elaho and the Sims drainage will provide for easier access to 100 Lakes and other alpine areas.

### 6.3 Landscape Management Unit VQO Analysis

#### 6.3.1 Ashlu LMU

The Ashlu LMU has 38 visual landscape units. The Ashlu LMU is zoned "Enhanced Resource Development" as the prevailing management intensity. The Modification VQO is recommended as a desirable VQO both for timber supply enhancement and to provide the opportunity for improved landscape design in comparison with the sometimes excessively modified current condition elsewhere in the valley.

VQO	Current (No. VLU's)	Recommended (No. VLU's)
Modification	17	20
Partial Retention	5	4
Retention	16	14
Total	38	38

While visual landscape sensitivity is generally moderate, there 1994 inventory identified as many Retention VQO's (16) as Modification VQO's (17). Most of the Retention units contain little or no operable forest (0-1% by area). These are default retention units in perpetuity. In the remaining 3 VLU's with Retention VQO having operable forest, and where overlaying recreation values did not impose a greater restriction, Partial Retention was recommended to increase timber supply appropriate to the LMU's Enhanced Resource Development zonation, and will provide some operational design flexibility. In each of these units, operability is a low percentage, by area, ranging from 4% in VLU 111, 8% in VLU 116, to 22% in VLU 123.

The operability constraint will ensure any alteration is subordinate in the landscape. The 3 units have high Landscape Sensitivity Rating indicating that they will require cautious design treatment when operations are proposed for them. In those cases, operable forest is banded at the lower extremity of the VLU's which are adjacent to VLU's recommended for less restrictive VQO's (Modification).

Four VLU's currently with Partial Retention VQO are recommended for Modification (VLU's 113, 118, 119, 124). The Partial Retention units were upper valley, lower slope units with timber concentrations ranging from a high of 42% of the area in VLU 119 to a low of 9% in VLU 113.

Overall operability limitations will create a natural control to the level of dominance of forest operations in these units, though design will be an important consideration. The four units have similar characteristics of unaltered forest, but their existing visual condition should not be solely responsible for assigning a VQO more restrictive than neighboring units that have already sustained some degree of alteration.

The visual landscape sensitivity rating in each of these units is moderate except for VLU 124 which has high LSR. This unit presented what appears to be an anomaly when considered in relation to adjacent units of similar characteristics and viewing opportunity but which had only moderate LSR and received a Modification VQO. Visual landscape design will be important. VLU 138, which is near the confluence of the Ashlu and Squamish Rivers, is recommended to remain Partial Retention.

#### 6.3.2 Lower Elaho Landscape Management Unit (VLU's 201-221; 249-257)

VQO	Current (No. VLU's)	Recommended (No. VLU's)
Modification	19	18
Partial Retention	5	6
Retention	6	6
Total	30	30

The lower Elaho contains 30 VLU's with VQO's which are recommended to remain largely unchanged to meet the "Enhanced Resource Development" management intensity. The majority of VLU's already have a Modification VQO (19). One Modification unit is proposed for Retention as it contains no operable forest (VLU 209). Partial Retention is recommended to be maintained for 5 VLU's located along the river (VLU's 202, 213, 218, 219, 257). Most are small, ranging from 28 ha. to 89 ha., although VLU 213 is 251 ha. Most have already sustained harvesting. Unit 257 is located at the Devil's Elbow, a popular recreation and scenic feature near the confluence of the Squamish River. Application of landscape design principles will encourage maximum harvest yields while meeting the VQO's. One unit is proposed to be shifted from Retention to Partial Retention (VLU 254), which is a small (44 ha.) riverside unit with moderate sensitivity, moderate VAC, and is already modified.

#### 6.3.3 Clendenning LMU (VLU's 222-236)

VQO	Current (No. VLU's)	Recommended (No. VLU's)
Modification	3	6
Partial Retention	6	0
Retention	6	9
Total	15	15

The Clendenning LMU contains 15 VLU's, 12 of which are wholly or mainly within the Protected Area. The units within the Protected Area are scenic and visually sensitive and present a panoramic pristine landscape to viewers travelling the Elaho mainline. Nearly half the VLU's in the Clendenning have no operable forest (7 VLU's).

Of these, 6 are either fully or partly outside the Protected Area (VLU's 222, 223, 227, 228, 232, and 234), visibly expanding default Retention beyond the protected area, particularly those units extending above the Protected Area as seen from Elaho Mainline viewpoints (VLU's 227, 228, 232, 234). Two units with no operable forest are within the Sims Creek portion of the LMU (VLU's 222-223).

The current VCO's include 2 large units of Modification (VLU's 230, 226) and several with Partial Retention. High timber values are found in units 225, 226, 229, 230, 231 and 235, ranging from 40% of the area to 96% of the area. All VLU's within the protected area are now default Preservation VCO in perpetuity.

Several units with operable forest extend outside the protected area boundary. A portion of VLU 235 extends into the Upper Elaho LMU. As the zoning is General Resource Management in the Upper Elaho, the portion of VLU 235 outside the Protected Area is recommended for Modification (currently Partial Retention VCO). VLU 233 has operable forest (4%), located within the Protected Area. VLU 230 straddles both sides of the Elaho, with significant operable forest area. Its current VCO of Modification is supported for the area outside the Protected Area. VLU 229 is 35% operable, all of which is within the Protected Area. Portions of VLU's 225 and 226 have portions of operable forest outside of the Protected Area in Sims Creek. As Sims Creek is zoned for Enhanced Resource Development, the current Modification VCO is supported. VLU 224, with 12% operable forest area, is also located within the Sims. Its current Modification VCO is supported.

It is suggested that equivalent volume contributions to timber supply determination of visual operable forest located within the Protected Area be transferred through reduced constraints elsewhere, such as in VLU's 238 and 239 in the Upper Elaho opposite to this watershed, or in as yet to be inventoried areas as identified "V0" in the Recreation Inventory. Similarly, the Clearing/Denning also has significant V0 areas identified in the Recreation Inventory within the Protected Area. To balance the greater restriction imposed within the Protected Area for these VO's, other VO areas in the TFL could be considered for more intensive management (i.e. Modification VCO) such as in Sims Creek and Upper Elaho.

### 6.3.4 Upper Elaho Visual Management Unit (VLU's 237-248)

VCO	Current (No. VLU's)	Recommended (No. VLU's)
Modification	6	9
Partial Retention	4	1
Retention	2	2
Total	12	12

The Upper Elaho has General Resource Management zonation (IRM). There are 12 VLU's, 6 of which should retain their modification VCO. Three units with Partial Retention currently (VLU's 237-239) are recommended for Modification VCO. VLU 237 is located in the upper Elaho valley beyond the roaded area. The unit has low visual sensitivity, being somewhat distant, and could more appropriately be managed together with upper units noted as V0 in the Recreation Inventory and discussed in the next paragraph. VLU's 238 and 239 are proposed for Modification VCO to provide consistency with neighbouring units, and to relieve some volume constraint of the Protected Area. One riverside unit (VLU 245) is recommended to stay as Partial Retention (current condition is excessive modification). VLU's 247 and 248 are inoperable alpine fringe areas below the Pemberton tee-field with default retention.

The large extent of V0 in the Upper Elaho beyond the extent of the roadway is recommended for future Landscape Inventory and management consideration. The VO area should be considered for greater management intensity to offset visual areas within the Protected area as it will be managed to General Resource Management zone criteria. Elevated viewing opportunities, such as from the 100 Lakes Plateau towards the Protected Area and the valley bottom, were considered important in the Recreation Analysis and in the Soa Timber Supply Area Recreation Management Strategy and Analysis Report. Such opportunities should be considered in future landscape inventory and in development planning.

### 6.3.5 Squamish Landscape Management Unit

VCO	Current (No. VLU's)	Recommended (No. VLU's)
Modification	25	28
Partial Retention	10	4
Retention	16	19
Total	51	51

The Squamish LMU has the greatest proportion of high landscape sensitivity (16 VLU's) and is known to offer spectacular views. There are 51 Visual Landscape Units in the Squamish LMU, half of which have a current VCO of Modification (25 VLU's). Three of these units are recommended to be shifted to Retention due lack of operable forest (VLU's 302, 322, 324). Eleven other units already have Retention VCO which is supported by lack of operable forest (VLU's 304-306, 310, 316, 317, 325, 327, 331, 332, and 339). One unit with Retention (VLU 335) has operable forest. The rating is supported, as it is a high value river unit. Another small unit near the Mile 29 1/2 Recreation Site (VLU 345) was recommended to keep its Partial Retention VCO.

Six VLU's are recommended to shift from Partial Retention to Modification to correspond to the "Enhanced Resource Development" zone management intensity (VLU's 303, 307-309, 311, 312). Four of these units have high landscape sensitivity (LMU's 307, 308, 310, and 312), therefore the visual landscape design process is necessary, and appropriate in this landscape. These units are all at the lower end of the LMU between the Ashu and Elaho on the west side of the Squamish River, seen from viewpoints and recreation sites along the mainline and river. Operable forest component varies between 30% (VLU 309) to 75% (VLU 312). They are bounded by inoperable units above (VLU's 302, 304-306, 310) which contribute largely to the scenic value and will remain unchanged.

These units are within an area that has been proposed in the current Management Plan for TFL 38 as a candidate for total chance planning. Current terminology would identify the area as a landscape design unit suitable for integrated visual design (visually driven total chance planning). Of the total of 9790 hectares within this "design unit" (VLU's 301-312), a net area of 1739 hectares contain operable forest, or 18% of the total. This low ratio will provide substantial support to successful design, while the Modification VCO will provide flexibility in design where operable forest is located. Application of the integrated visual design process in this "Lower Squamish Design Unit" is therefore highly recommended.

The Modification VCO is supported for lower slopes generally throughout the remainder of the LMU, consistent with Enhanced Resource Development zonation. High value alpine viewscape along the eastern edge of the TFL seen from the Squamish mainline were identified in the Landscape Inventory which warranted a measure of restriction. Most of these units are default Retention without operable forest. Some of these VLU's were overlain by restrictive Recreation Inventory classification such as VLU's 325 and 327 (Table Mountain units) which also have AO ratings in the Recreation Inventory.

The Clendenning protected area will provide an enormous benefit contributing substantial pristine forest to the range of visual quality within the TFL, and can encourage greater support for Enhanced Resource Development generally throughout the TFL.

The greatest portion of the TFL will always remain in its current visual condition as 78% is inoperable. This will do much to ensure the maintenance of a quality viewing experience provided that forest development activities are responsive to specific recreation needs and portray overall compatibility in the landscape by exhibiting good landscape design principles and practices.

Visual landscape design is seen as essential in all visually sensitive areas even with modification VQOs. The integrated visual design approach should be applied to the "Lower Squamish Design Unit". This "visually-driven" total chance plan will be effective in securing an maximal harvesting opportunity over the long term within this visually sensitive landscape, thus supporting the intent and objectives of the Strategy<sup>19</sup>. The additional steps of the Strategy for managing scenic values consistent with Code objectives are examined in Part B.

Partial Retention was supported to remain unchanged in two units (VLU's 337, 338) to provide a transition between lower Modification VQO's and upper alpine Retention.

**6.4 Summary and Conclusions of VQO Review**

VQO	Current (No. VLU's)	Recommended (No. VLU's)
Modification	70	81
Partial Retention	30	15
Retention	46	50
Total	146	146

Modification is the predominant VQO along lower slopes in each valley. A modest overall expansion in the number of VLU's with Modification as VQO was recommended in this analysis where it was in balance with adjacent areas and with the prescribed management intensity (11 units, or 8% of the total units in the landbase). There was also a modest increase in Retention VQO's recommended, due mainly to absence of operable forest, with a resulting default Retention visual quality assured. The number of VLU's with Partial Retention would decline by 50%.

The following table reveals the overall recommended shifts in VQO's and their direction. The 19 recommended for less restrictive VQO's represents 13% of the number of VLU's. Offset by the 5.5% of units with increased restrictiveness, there would be a recommended net number of units with decreased restrictiveness of 11 units or in 8% of the total VLU's. Operable volume within each LMU was not available at the time of this analysis. The contribution to timber supply of these recommended shifts will be determined during the timber supply analysis.

**Recommended VQO Shifts, No. of Units (Current-Recommended)**

LMU	R-PR	PR-M	PR-R	M-R	Total
Ashlu	3	4		1	8
Lower Elaho	1		3	1	2
Clendenning		2			5
Upper Elaho		3			3
Squamish		6		3	9
Total	4	15	3	5	27

Total, More Restrictive VQO (PR-R, M-R) = 8 VLU's  
 Total, Less Restrictive VQO (R-PR, PR-M) = 19 VLU's

Areas without Landscape Inventory should be inventoried before development occurs in those areas. Important high elevation viewing opportunities should be considered in the inventory such as from 100 Lakes Plateau viewpoints in the Upper Elaho and from the Sigurd Lake area south of the Ashlu.

<sup>19</sup> Ministry of Forests, 1996. Strategy for Managing Visual Resources Consistent with Code Objectives.

## Part B. Strategies to Reduce Adjacency Constraints

### 7. Procedures for Reducing Adjacency Constraints

The Strategy for Managing Visual Resources Consistent with Code Objectives, June, 1996 (the Strategy document) encouraged implementation of one or more strategies to further reduce adjacency constraints in scenic areas once all possible gains have been derived by reviewing the Visual Landscape Inventory data (Part A). These were:

1. Reduce the time to achieve visually effective green-up (VEG)
2. Improve Visual Landscape Design
3. Encourage more use of alternative silviculture systems
4. Utilize angle of incidence (AOI) to better place cutblocks
5. Carry out Visual Rehabilitation

#### 7.1 Reducing Time to Visually Effective Greenup (VEG)

The Strategy document provides two approaches which will reduce the adjacency constraints associated with VEG and make more timber available. They are:

- a. Reassess VEG heights being used
- b. Implement forestry practices that will decrease time to VEG.

##### 7.1.1 Re-assessing Visually Effective Greenup Heights

VEG was noted in the Recreation Analysis Report<sup>20</sup> to occur in TFL 38 at a minimum of 14 years or at a minimum height of 3 metres. The current timber supply analysis was determined at 5 metres greenup height or 14 years. Refinement of specific requirements related to slope category will require slope analysis of areas within the Visual Landscape Inventory. Slopes less than 30% require less than 5.5 metres greenup height, while slopes greater than 40% may require greater than 5.5 metres greenup height, assuming a well stocked stand, little site disturbance, middle-ground viewing, and a vertical viewing angle not exceeding 20%. In TFL 38 the average of 14 years to achieve 5 metres VEG height is considered reasonably representative of on-ground achievement. No detailed analysis was conducted, but should be included as a factor in the spatial analysis that will be undertaken for the TFL.

##### 7.1.2 Strategies for Reducing Time to VEG

The Strategy document presents several strategies which can be implemented in TFL 38 if they are not already being realized as normal practice:

- Immediate Site preparation - done in TFL 38, if required for stand establishment
- Immediate planting of fast-growing species - done in TFL 38 - normal practice.  
Note: Douglas fir and Western red cedar meet this definition and are the common species planted in TFL 38. Western hemlock is also fast growing and regenerates naturally.
- Use of fertilizers on low sites - applicability not determined for TFL 38
- Reduce visible road and site disturbance (Note: roads are rehabilitated in TFL 38)
- Increase stocking density - applicability not determined for TFL 38
- Plant tree species with bushy or thick crowns - normal practice as planting of Douglas fir, Western red cedar is common in TFL 38.

<sup>20</sup> Recreation Resources Limited, 1996. Recreation Analysis and Management Strategy Report, P.9.

The greatest response for reducing VEG adjacency constraints in TFL 38 compared to Provincial averages will be realized from early planting of fast-growing species, natural fast-growing in-fill common to the area, with a related reduction in longer term impacts through road design and rehabilitation. Current VEG values used for timber supply analysis appear to be appropriate given the fast regeneration, even on the predominant steep slopes in the TFL. Future gains made by implementing additional VEG strategies will be measured by comparing VEG periods for intensively managed stands and non-intensively managed stands.

### 7.2 Improving Visual Landscape Design (VLD)

The Strategy document encourages the application of visual landscape design techniques as an important way of "freeing up wood and reducing short term adjacency constraints". Percent denudation limits were set for each VQO for use in both timber supply analysis (planimetric percent) and in operations (perspective percent) in response to current (and past) practices. Current practices without visual landscape design were interpreted to equal the midpoint of each percent alteration range. The alteration limits for each VQO are:

VQO	Perspective View (%)	VLU Alteration Limits Planimetric (TSR %)
Preservation	0	0-1
Retention	0-1.5	1-5
Partial Retention	0.9-9.8	6-15
Modification	5.6-21.4	16-25
Maximum Modification	11.6-22.6	26-40

If visual landscape design is practiced, the Strategy document expects that larger scale openings would generally be approved for a given VQO. International Forest Products Limited has committed to visual landscape design procedures in the TFL. These procedures will apply to cut-blocks, road location and building practices, road rehabilitation, and other practices that visually alter a scenic area. Operational staff have participated in Visual Landscape Design workshops and training sessions and are conversant with the Visual Landscape Design Training Manual. On-going involvement of landscape design consultants is anticipated.

In Part A of this analysis, a study area was identified along the lower Squamish River for implementation of a visually driven total resource design (integrated visual design). This area was identified in the current management plan for total chance planning, and has been encouraged by the Ministry of Forests, Vancouver Forest Region. The design process will influence the maximum rate of harvest while meeting the VQO's. As provided for in the Strategy document, gains to be realized for TFL 38 by fully implementing visual landscape design will be evaluated and tested in the timber supply analysis by moving from the mid-point of the percent alteration chart for each VQO to the maximum denudation scale for each VQO.

The Modification VQO is advanced as the generally appropriate VQO in TFL 38, particularly in the Enhanced Resource Development zone south of the Elah/Sims Creek confluence. It is also anticipated that as more skill is achieved in visual landscape design, additional shifts to less restrictive visual quality objectives can be made beyond those proposed in Part A of this analysis. Tests of upward shifts within the given VQO range and to the next VQO range can be assessed as options in the proposed Lower Squamish Design Unit total resource design project.

### 7.3 Use of Alternative Silvicultural Systems

The Strategy document outlines a set of detailed procedures as "one of many options for estimating stands suitable for partial cutting and for determining potential volume gains". The procedures assess stand type and slope class in relation to operational feasibility, regeneration requirements, and social and ecological considerations to determine the appropriateness of partial cutting.

Ministry of Forests' "Partial Cutting to meet VQO's" research indicated that partial cutting silvicultural systems may provide greater volumes of timber from scenic areas with restrictive VQO's when compared to clearcutting. A table predicting VQO's using Partial Cutting Silvicultural Systems from that research was presented in the Strategy document (Appendix 1) which reveals, for example, that a Partial Retention VQO could be achieved while removing 50% of a stand with a 30 metre height, with greater removal possible at lesser tree heights.

Familiarity with partial cutting is developing in TFL 38. A green-tree retention system has been used for visual quality considerations, leaving 50 to 70 stems per hectare for long term vertical structure. Interest has been expressed in experimental patch or strip cuts (Jeff Fisher, pers. comm.) The availability of helicopter operations can offer significant flexibility to operational layout with opportunities for variable retention within cut-blocks. Further exploration and trials are recommended to increase the volume of wood available in visually constrained landscape units.

Future gains in volume by VQO class realized in TFL 38 by implementing alternative silvicultural systems should be documented and compared to conventional clear cut volumes. At this time no determination could be made. This option should be fully explored in the proposed Lower Squamish total resource design exercise.

### 7.4 Angle of Incidence Considerations

Ministry of Forests' angle of incidence / plan to perspective research (AOI/P2P)<sup>21</sup> has determined that, depending on view-angle / viewed slope interactions, there can be a greater or lesser amount of planimetric alteration while meeting perspective view VQO alteration limitations. More alteration can occur where the landform is oblique to, or rounds away from, direct view, and where tree-screening factor is large. Front-facing steep slopes in direct view may support only a lesser amount in plan view than perspective view.

The study also determined that 20% of the visible landbase, which was in the visually constrained front zone and therefore creating the greatest restriction, accounted for 70% of the perspective view area. While plan-to-perspective ratios for the visually constrained front zone were less than 1:1, ratios for the remaining 80% of the visible landbase in the research study exceeded 3:1. The conclusion can be drawn from those results that much less restriction need be imposed on 80% of the visible landbase in the study area. International Forest Products Limited intends to further the research by seeking FRBC funding to apply Angle of Incidence analysis to TFL 38 in 1997.

<sup>21</sup> Ministry of Forests, Vancouver Forest Region, 1996. A Landscape Inventory Method for VQO Plan Area Calculations.



Two benefits can accrue from this operational research. Firstly, planimetric percentages used in timber supply analysis based on Angle of Incidence will be compared to current provincial figures for each visual landscape unit to determine if gains in timber supply can be realized by this highly detailed analysis of the visual landscape.

Secondly, operational design will have the benefit of advance understanding of critical areas where VQO percentages will be rapidly used up and others where greater volumes can be harvested for a given percent alteration, thereby providing a technique for optimizing or maximizing harvesting opportunities in scenic areas.

Gains in timber supply and in operational volumes harvested for a given VQO made available through Angle of Incidence / Plan to Perspective research will be submitted for consideration in timber supply determination when available.

### **7.5 Visual Rehabilitation**

Visual rehabilitation is encouraged in the Strategy document to improve the appearance of past forest practices. Poorly designed openings can result in postponement of future entries if a longer period of time is required for the existing visual condition to restore so that it can meet the VQO. Rehabilitation actions can be carried out to reshape blocks, allowing them to more readily be absorbed in the landscape and providing better design opportunity for future harvesting.

Rehabilitation may require expansion of current alteration in landscape units where the existing visual condition has already exceeded the VQO, and may have exceeded Forest Practices Code limitations on opening size. Further activity could be viewed negatively unless the prescription can adequately substantiate the short and long term visual benefits. FPC Operations Planning Regulation allows the latitude for areas contiguous to a non-greened up area to be logged to achieve the VQO.

Longer term impacts such as highly visible roads can be rehabilitated so that VEG is reached earlier and the existing visual condition meets the VQO. Road rehabilitation is carried out in the TFL for silvicultural purposes. Emphasis should be expanded to roads creating visual impact, thereby hastening VEG and subsequent entry time.

Short term gains in harvest volumes can be realized by rehabilitation harvesting operations. More importantly, landscape units currently exceeding the VQO can more quickly be brought into appropriate condition, thereby encouraging earlier future entries in those units and in adjacent units. It is recommended that a plan for visual rehabilitation be prepared.

### **7.6 Review of Detailed Visual Absorption Capability**

When calculating the influence of VAC on timber supply, low VAC places the percent alteration constraint at the lowest point in the range for a given VQO and nullifies any green-to-operable ratios<sup>27</sup> that would act as a multiplier effect. The green-to-operable ratio provides for cut calculations as a percentage of the entire visual landscape unit as normally viewed, rather than measured against just the operable component for a given percent. Medium VAC selects the mid point.

<sup>27</sup> Ministry of Forests. Factoring Recreation into Timber Supply Procedures.

It was noted during the review of landscape inventory in Part A of this analysis that there was considerable variety in forest cover patterns and natural openings within the TFL. The Landscape Inventory determined that only 3% of the visual landscape had high VAC while 56% was medium and 41% was low. Given the overall diversity in the TFL, it is considered that average the VAC in the TFL is medium. This rating should be modelled in the timber supply review. A thorough review should be conducted in the next Landscape inventory update to ensure that topographic and vegetative patterns are fully recognized to moderate the influence of steep slopes in the determination of VAC.

### **7.7 Summary of Actions Reduce Adjacency Constraints**

Actions to reduce adjacency constraints in scenic areas within TFL 38 will require planning and implementation. Gains should be documented in each category. International Forest Products Limited has committed to visual landscape design in visually sensitive areas within the TFL. This commitment, combined with the flexibility afforded by the availability of helicopter harvesting, the rapidity of reforestation, early achievement of VEG suggests that a shift from mid-point to upper range in each VQO is supportable for timber supply determination. The influence of VAC on timber supply should also be examined by using medium average VAC. Initiation of a total resource design study, together with understanding provided by angle of incidence research in the TFL, will confirm the ability to harvest at the enhanced level while meeting the VQO's.

**8. Appendices**

**8.1 Appendix 1 Predicting VQO's Using Partial Cutting Systems**

8.2 Appendix 2 Visual Landscape Analysis Worksheet

Predicting VQO's Using Partial Cutting Silvicultural Systems		Tree Height(m)									
		5	10	15	20	25	30	35	40	45	50
Volume (Stems Removed in %)	10	R	R	R	R	R	R	R	R	R	R
	20	R	R	R	R	R	R	R	R	R	R
	30	R	R	R	R	R	R	R	R	R	R
	40	R	R	R	R	R	R	R	R	R	R
	50	PR	PR	PR	PR	PR	PR	PR	PR	PR	PR
	60	PR	PR	PR	PR	PR	PR	PR	PR	PR	PR
	70	PR	PR	PR	PR	PR	PR	PR	PR	PR	PR
	80	PR	PR	PR	PR	PR	PR	PR	PR	PR	PR
	80	PR	PR	PR	PR	PR	PR	PR	PR	PR	PR
	90	M	M	M	M	M	M	M	M	M	M

Note: There is a 90% or greater chance of achieving the VQO identified

Source: Ministry of Forests, Range, Recreation, and Forest Practices Branch, 1996



Appendix 2 - TFL 38 VQO Review

Appendix 2 - TFL 38 VQO Review

VLU	Area (Ha.)	VSR	VAC	EVC	VQO	Prop.	% Oper.	Comments
222	320.954	M	L	R	R	R	0	DEFAULT R
223	191.100	H	L	R	R	R	0	DEFAULT R
224	326.910	M	M	R	M	M	11.62	88% DEFAULT R
225	207.923	M	L	R	PR	M	96.63	in PAS, 10% outside in Sims Creek
226	1433	M	M	R	M	M	40.13	70% in PA Outside is 70% prod. Up Sims
227	380.248	H	L	R	R	R	0	40% PA, remainder default R
228	1123.834	H	L	R	R	R	0	10% PA, Remainder inoperable.
229	1536.870	M	M	R	PR	R	34.72	80% in PA remainder inoperable
230	1109.686	M	M	MM	M	M	84.48	20% in PA, mainly on opposite side of river at confluence
231	397.891	M	M	R	PR	M	73.48	95% in PA; 1% outside PAS in Upper Eliaho, links with unit 235 tail
232	283.240	H	L	R	R	R	0	DEFAULT R, 50% in PA; no volume
233	714.684	H	M	R	PR	R	3.64	80% in PA. All op in PA. Default R
234	416.934	H	L	R	PR	R	0	R DEFAULT 40% in PA
235	1255.265	H	M	R	PR	M	41.35	70% in PA. Outside tail in Upper Eliaho
236	501.347	H	L	R	R	R	0	DEFAULT R, 100% in PA

Lower Eliaho LMU

VLU	Area (Ha.)	VSR	VAC	EVC	VQO	VQO	Prop.	% Oper.	Comments
201	237.705	M	M	M	M	M	89.92	at confluence. 312 PR adjacent	
202	50.002	M	M	PR	PR	PR	93.75	small river unit at bend	
203	1288.416	M	M	R	M	M	28.79	large unit, 73% DEFAULT R	
204	327.832	M	M	R	M	M	3.65	96% Default R	
205	246.897	M	L	R	R	R	0	DEFAULT R	
206	381.916	H	L	R	R	R	0	DEFAULT R	
207	428.160	M	M	R	M	M	38.93	80.7	
208	42.688	M	M	MM	M	M	90.7	Default R	
209	189.095	L	M	R	M	R	0.53	18.58	
210	338.822	M	L	R	M	M	0	DEFAULT R	
211	301.645	M	L	R	R	R	1.99	98% Default R	
212	301.477	M	L	R	M	M	79.05	river unit - logged, VP E46, an anomaly.	
213	250.941	L	H	M	PR	M	21.86	78% default R	
214	1083.705	M	L	R	M	M	27.22	possible # problem - NV in 92J012	
215	1046.012	M	M	R	M	M	98.46	river unit, logged, M adjacent	
216	65.498	M	M	R	PR	PR	0	Default R	
217	801.047	M	L	R	R	R	22.97	near river, like 216	
218	417.776	M	M	R	M	M	48.57	at confluence	
219	34.801	M	M	PR	M	M	57.84	river unit logged	
220	758.989	M	M	R	M	M	60.53	DEFAULT R	
221	374.733	M	H	MM	M	M	32.27	79% DEFAULT R	
249	309.807	M	L	R	R	M	96.67	opp. 208 M (now EM)	
250	1693.297	M	L	R	M	M	81.53	Goldbridge V.P.	
251	29.971	M	M	M	M	M	21	at confluence. Rec. value	
252	222.751	M	L	EM	M	M	90.91		
253	581.267	M	L	R	M	M	75.88		
254	43.982	M	L	M	R	PR	89.57		
255	458.876	M	M	PR	M	M	68.89		
256	23.438	M	M	EM	M	M			
257	89.574	M	M	R	PR	PR			

Appendix 2 - TFL 38 VQO Review

Upper Elahio LMU

VLU	Area (Ha.)	VSR	VAC	EVC	VQO	VQO Prop.	% Oper.	Comments
237	175.493	L	M	R	PR	M	87.73	last unit in Elahio. Low VSR, Assoc. with VQ's; treat together
238	724.705	M	M	R	PR	M	65.38	opp. side from PA
239	283.187	M	M	R	PR	M	100	opp. side from PA
240	232.854	M	M	R	M	M	29.18	opp. side from PA
241	489.087	M	L	R	M	M	86.78	opp. side from PA
242	37.068	M	L	EM	M	M	100	opp. side from PA
243	186.148	M	M	MM	M	M	93.55	
244	1337.239	M	L	R	M	M	53.14	
245	38.017	M	L	EM	PR	M	71.79	small unit, at confluence
246	200.665	M	L	EM	M	M	96.5	
247	355.851	M	L	R	R	R	0	Default R, Minor Fringe AO and B1 rec. units
248	572.886	H	L	R	R	R	0	Pemberton Icefield AO and B1 rec. units, Pemberton Icefield Default R.

Appendix 2 - TFL 38 VQO Review

Squamish LMU

VLU	Area (Ha.)	VSR	VAC	EVC	VQO	VQO Prop.	% Oper.	Comments
301	221.904	M	PR	M	PR	M	61.71	
302	72.019	M	R	R	M	R	0	DEFAULT R
303	1172.746	M	L	R	PR	M	36.5	near river, S 25, 26, Br 200 VP's
304	161.023	M	L	R	R	R	0	DEFAULT R
305	190.899	M	L	R	R	R	0	DEFAULT R
306	2185.309	H	L	R	R	R	0	DEFAULT R
307	633.117	H	L	R	PR	M	43.76	Part of scenic unit 303-312 significant river rec., camping 56% default R
308	939.911	H	M	R	PR	M	42.08	S29 1/2 Rec. Site
309	316.770	M	L	R	PR	M	29.11	70% default R, focal down river
310	3187.607	H	L	R	R	R	0	default R.
311	595.529	M	L	R	PR	M	60.84	40% default R at confluence Squamish/Elahio VP S-36.
312	114.474	H	M	R	PR	M	74.78	at confluence, VP S-37
313	189.243	M	H	M	M	M	79.4	Part of scenic unit 306-312 on north side of confluence, flatter
314	1337.117	M	M	R	M	M	44.8	
315	800.407	M	M	M	M	M	87.61	river unit north of confluence
316	131.576	M	L	R	R	R	0	Default R
317	144.649	M	L	R	R	R	0	DEFAULT R
318	78.713	M	M	R	M	M	67.09	
319	492.504	M	M	M	M	M	96.34	
320	330.248	M	M	R	M	M	77.58	
321	297.182	L	H	R	M	M	10.1	89% default R
322	101.975	L	M	R	M	R	0	default R
323	640.782	M	M	R	M	M	39.88	60% DEFAULT R
324	200.230	M	M	R	M	R	0	DEFAULT R
325	258.680	H	M	R	R	R	0	DEFAULT R, AO Table Mountain
326	157.822	M	M	M	M	M	70.08	
327	206.142	H	M	R	R	R	0	DEFAULT R, AO Ring Min. rec. unit. High quality vs. from mainline
328	2020.670	M	M	M	M	M	78.43	
329	473.116	M	M	M	M	M	84.36	
330	11.687	M	EM	M	M	M	66.67	
331	146.978	H	L	R	R	R	0	DEFAULT R, Powder Min. Traverse
332	459.966	H	L	R	R	R	0	default R, Mt Cayley access route
333	907.329	M	M	R	M	M	36.87	
334	826.228	M	PR	M	PR	M	54.53	

Appendix 2 - TFL 38 VQO Review

Squamish LMU (Cont'd)

VLU Area (Ha.)	VSR	VAC	EVC	VQO	% Oper.	Prop.	Comments
335	36.117	H	L	R	R	25	B0 River unit at confluence, small
336	862.405	L	MM	M	M	89.48	
337	70.677	H	M	R	PR	43.66	Prominent knoll in front of Mt. Cayley.
338	512.435	H	M	R	PR	37.7	50% default R
339	546.352	H	L	R	R	0.55	Mt. Fee - 62% default R
340	354.092	H	L	R	R	0.56	99% default R
341	108.432	H	L	R	R	0	Mt. Fee - Cypress Peak high vs. default R
342	1138.534	M	M	R	M	57.7	Mt. Fee - Cypress Peak high vs/ ridge route. Default R
343	460.114	M	M	R	M	61.17	
344	258.952	M	M	R	M	71.32	
345	29.528	M	M	R	PR	63.33	by river
346	65.458	H	L	R	R	0	Alpine area at head of Shovelnose Creek mountainering route to Cypress Peak. Tribout-Seagram Lakes area DEFAULT R
347	166.503	M	L	R	M	31.95	
348	41.200	M	M	R	PR	53.66	River VP, small. Larger vs area behind, not rated
349	688.374	M	M	MM	M	59.53	
350	102.447	M	M	R	R	0	DEFAULT R
351	802.535	M	M	M	M	75.69	

Cover Photo: VP S30 View Southwest from Recreation Site Along Squamish  
Main Source: T.F.L. 38 Visual Landscape Inventory, 1994  
Photography: Recreation Resources Limited





File: 16200-00

June 6, 1997

To: John Crooks  
Recreation Specialist  
Squamish Forest District

From: Cam Campbell  
A/Regional Landscape Specialist  
Vancouver Forest Region

Re: Identifying "Known" Scenic Areas in TFL 38

John:

I have reviewed the "Managing Scenic Values in TFL 38 Consistent with Forest Practices Code Impact Objectives" (prepared by Resource Design Inc.) document and the Scenic Areas proposal submitted by Laszlo Kardos of Interfor. I offer the following comments and recommendations for your consideration<sup>1</sup>.



*The Strategy Document*

The Strategy document prepared by RDI consists of two parts:

- 1.) A review of the current Visual Landscape Inventory, that identifies where VQO's may be amended to less restrictive regimes in each of the 5 Landscape Management Units (LMU's).
- 2.) Proposed management strategies that could be employed to reduce adjacency constraints in Scenic Areas.

I generally concur with the approach of the strategy, am supportive of the direction it provides and believe it consistent with the Crown's economic and social objectives regarding visual resources and the objectives of the Forest Practices Code Timber Supply Analysis report.

One notable error is that "Scenic Value" (as used to assist in determining the overall "Scenic Value of Scenic Areas"<sup>2</sup>) is incorrectly equated with visual sensitivity. "Scenic Value" as used in the addendum 1 of the RRFPPB Strategy document was not intended to equate to either the VSC

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<sup>1</sup> Note: All comments are framed in terms of the LMU's defined in the RDI document.

<sup>2</sup> Page 9 of the Managing Scenic Values in TFL 38 Consistent with Forest Practices Code Impact Objectives)

of new or VSR of old. Rather, the term was used to reflect the general importance, beauty, sensitivity etc. of an area or travel corridor. The intent was to be able to zone a TFL / Forest District into areas where the potential exists to make adjustments to VQO's, extent of Scenic Area etc. as vs. no potential to make adjustments. The process was not designed to address Visual Landscape Inventories on a polygon by polygon basis. As a result, RDI's assessments of Scenic Value may not accurately acknowledge the influence of current and proposed use and level of concern for the area.

The *TFL 38 Recreation Analysis and Management Strategy* highlights the fact that the TFL "lay at the doorstep of the lower mainland population" and that by the year 2030 an estimated 190,000 people per year could be visiting the TFL if current trends in recreation use continue. This, combined with the fact that the area has been earmarked by advocacy organisations for attention suggests the corridor (particularly the Upper and Lower Elaho LMU's, as evidenced by the two recent road blockades) could be considered as having a moderate level of concern / scenic value rather than RDI's assessment of low scenic value.

No recommendations are offered by RDI as to which Scenic Areas should or should not be managed as "known" on a basis of "scenic value". In the document, RDI assumes all "known" Scenic Areas in the TFL currently managed would continue to be managed for visual values. The primary emphasis of the strategy was upon identifying where less restrictive visual management regimes could occur within these areas. Less restrictive management was considered possible because of improved forest practices (design planning) and opportunities inherent in the landscape structure. Particularly commendable is the recommendation to conduct "integrated visual design planning" in the Squamish LMU.

Given the strategy's emphasis on design and design planning as a means for striking a balance between fibre flow and maintenance of visual quality, I concur with most of the recommendations and suggested actions and am prepared to support the recommended shifts in VQO by LMU as presented on p. 21. The proposed amendments to Scenic Areas management and the strategies for reducing adjacency constraints should enhance fibre flow from these areas while maintaining a minimal level of landscape management.

#### *The Interfor Scenic Areas Proposal*

Following are comments specific to Interfor's Scenic Areas proposal. Please note that while the following expresses my opinions and recommendation, ultimately, it is a District decision about which areas merit management as "known" Scenic Areas in the TFL.

Using the RDI strategy document as a rationale, Interfor proposes a Scenic Areas management regime that deviates significantly from past practice. Where in the past all Scenic Areas have been managed, Interfor is proposing to only manage two specific portions of their landbase for visual values.

Interfor proposes that portions of the Ashlu and Upper Squamish VLMU's and portions of the Elaho / Squamish corridor no longer be considered as "known" Scenic Areas. Only two areas in the TFL, the first adjacent to the Clendenning Protected area in the Upper Elaho LMU (Scenic

Area 2), the second, an area adjacent to the Squamish River (Scenic Area 1), would be managed as "known" Scenic Areas. Within proposed Scenic Areas 1 and 2, the current VQO's would, for the most part, shift to less restrictive regimes (typically PR to M). Emphasis would be placed on design planning in the Scenic Areas; particular emphasis being placed on the Squamish LMU where an integrated visual design plan is proposed.

■ *Comments Respecting the Exclusion of Portions of the Squamish and Ashlu LMU's From Management*

Given my review of the RDI Strategy document, discussions with Jacques Marc, Senior Visual Resource Specialist and discussions with Andre Germain, yourself and Laszlo Kardos of Interfor, I accept the notion that managing all Scenic Areas within the TFL may not be appropriate. In light of the Chief Foresters Code Impact objectives, the Ministers policy regarding social and economic objectives respecting visual management and the background information provided in the RDI document, I concur with the proposal not to manage portions of the Ashlu and Squamish LMU's.

■ *Comments Respecting the Exclusion of Portions of the Upper and Lower Elaho from Management*

With regard to excluding portions of the upper and lower Elaho LMU's from management, I have the following comments.

As above, it is my opinion the corridor is better characterised as having moderate "scenic value" on a basis of level of concern and current and future use. The Recreation Analysis for the TFL suggests that tourism and recreational use are expected to continue to grow in the Corridor. The corridor currently provides access to the Clendenning Protected Area and will, at some point in time, be the trailhead for a linkage between the Elaho and Meagher drainage's. In addition to independent recreational uses, the corridor is also used by commercial interests. To maintain the quality of the recreational experience for all interests, it is my opinion that a minimal level of visual management is required along the entire length of the major route of travel between the Southern TFL boundary and the headwaters of the Elaho. As such, for TFL 38 I recommend that:

- The Upper and Lower Elaho LMU's and portions of the Squamish LMU be considered "known" Scenic Areas. (In addition to the VLU's included in proposed Scenic Areas 1 and 2 VLU's 201, 203, 204, 205, 206, 238 - 253 and 310 would be considered known)
- That the visual resources of the headwaters of the Elaho be inventoried and considered as "known".
- That the Visual Quality Objectives for the LMU's considered "known" be revised as per the RDI document to less restrictive regimes (this results in prescriptions in the operable areas that are typically Modification).0

- That the portions of the Ashlu and Squamish LMU's as identified on Interfor's Scenic Areas mapping not be managed as "known" Scenic Areas.

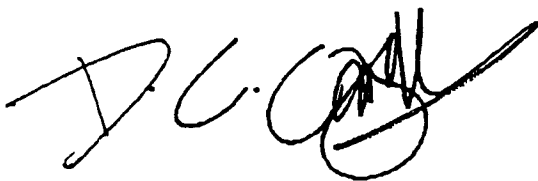
This would result in a management regime that is significantly less restrictive than is currently the case, removing a considerable portion of the TFL from any visual constraint at all. For those areas within Scenic Areas, the management regime is typically Modification, offering only a minimal constraint on timber supply. As the Licensee is committed to improved visual landscape design, for TSR purposes it is conceivable the upper range of the % denudation figures could be used for TSR modelling purposes. Such an approach is consistent with Ministerial direction respecting the management of visual resources, Interfor's proposed Resource Management Zoning and the RPAT recommendations.

However, if the District chooses to accept the Interfor Scenic Area proposal, I recommend that the Visual Quality Objectives not be shifted as per the RDI report and that the current VQO's remain in place. Additionally, I recommend inclusion of VLU 257, "The devils elbow" a significant recreation feature, in proposed Scenic Area # 1.

#### *Dispersal Classes for TSR*

Interfor requested input into what may be considered an appropriate dispersal class for use in Timber Supply Analysis. Without the benefit of a GIS analysis and on the basis of only a quick qualitative review of the operability mapping and a discussion with one of our Timber Supply Analysts, it appears a dispersal class approximating the provincial average is acceptable. My estimation is that the operable areas in the Scenic Areas can be characterised as being 70% solid, 20% clustered and 10% dispersed.

In closing, I want to emphasise that Interfor is to be strongly commended for adopting a proactive, strategic approach towards managing their Scenic Areas. I am confident implementation of the strategy will assist Interfor in enhancing fibre flow from their Scenic Areas while maintaining an appropriate level of visual quality in key areas.



Cam Campbell  
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cc: Laszlo Kardos RPF  
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