Audit of Visual Resource Management
Campbell River Forest District

Key Concepts and Terms

Visual resource management – visual resource management identifies and classifies scenic landscapes, and manages forestry activities on the landscape, to meet the visual needs of the public, visitors, and other resource users.

Scenic area – a scenic area is a visually sensitive area or scenic landscape identified through a visual landscape inventory or planning process approved by a district manager. It is more precisely defined by regulation.

Visual quality objective (VQO) – a visual quality objective is a legally binding resource management objective established by government, or contained in a higher level plan, that reflects the desired level of visual quality based on the physical characteristics and social concern for the area. It is more precisely defined by regulation.

Recommended visual quality class (RVQC) – a recommended visual quality class is a planning designation describing the level of alteration that would be appropriate for a scenic area, considering visual and other values. It is not legally binding.
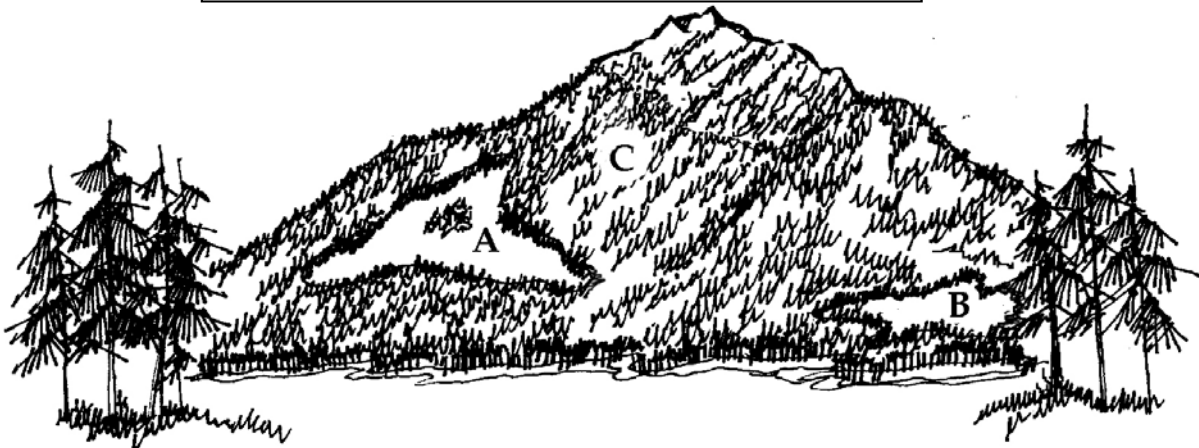
Visual impact assessment – a visual impact assessment is an assessment carried out to demonstrate that timber harvesting, or road operations, are consistent with the established visual quality objective for a scenic area. The assessment evaluates the visual effects of the planned operation on the landscape from one or more viewpoints.

Polygon – a polygon is an area delineated on a map, with associated attributes, such as a visual quality objective or recommended visual quality class.

Landform – a landform is a natural feature of the earth's surface, such as a mountain or a valley, and is the logical land area covered by a visual impact assessment. In the diagram below, the landform is the entire visible mountain (A+B+C, where A and B are cutblocks).

Percent alteration – the proportion of a landform that is visually altered by roads or cutblocks as seen from a viewpoint, expressed as a percentage. In the diagram below, percent alteration is calculated as:

$$\% \text{ alteration} = \frac{\text{Cutblock area (A + B)}}{\text{Landform area (A + B + C)}} \times 100\%$$

Adapted from BC Ministry of Forests, January 2001, Visual Impact Assessment Guidebook

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Introduction

The Audit

In August 2004, the Forest Practices Board conducted a pilot audit of visual resource management in the Campbell River Forest District. This is one of several pilot audits[1] designed to assess forest practices in relation to key values established by government under the new results-based *Forest and Range Practices Act* (FRPA). Recognizing that broader assessments of the results of forest practices in relation to government objectives would be required under FRPA, the Board is interested in the extent to which audits can facilitate such assessments and how to best report audit results.

> In January 2004, the *Forest and Range Practices Act* replaced the Forest Practices Code as British Columbia's forest practices legislation. FRPA requires the Forest Practices Board to take a new approach to forest practices audits.

The audit examined harvesting activities, and related operational planning, that were conducted between January 2002 and August 2004, within designated scenic areas in a portion of the Campbell River Forest District. This is longer than the typical one-year period for most Board audits, because it allows more meaningful assessment of the effectiveness of forest practices in relation to visual quality values. Also, the Campbell River Forest District Manager made scenic areas and recommended visual quality classes known in a letter and map dated October 2, 2001, so January 2002 was a suitable starting point for the audit. Audit field work commenced August 16, 2004, and was completed on August 20. Clear sunny skies prevailed during the audit, providing ideal visual conditions for fieldwork.

The audit area consists of the northeast portion of the Campbell River Forest District (see map on page 5). Four major licensees operating in the area were subject to audit: International Forest Products Ltd. (Interfor), TFL Forest Ltd. (Timberwest), Weyerhaeuser Ltd., and Canadian Forest Products Ltd. (Canfor). BC Timber Sales (BCTS) for the Strait of Georgia Business Area was also subject to audit within the area.

The audit assessed 66 cutblocks (see Table 3) and 54 forest development plans (see Table 4).

The two principal objectives of this visual resource management audit were:

1. to reach a conclusion regarding the level of compliance with the visual quality requirements of FRPA; and

2. to assess and conclude on the effectiveness of managing visual quality where forest practices have occurred.

Compliance

In determining compliance with Forest Practices Code (Code) requirements, the audit examined whether auditees:

- fulfilled requirements towards meeting established visual quality objectives;

- completed visual planning requirements in scenic areas; and

- met commitments to achieve recommended visual quality classes that may have been made in FDPs and silviculture prescriptions[2].

At the time of the fieldwork, visual resource management requirements consisted of relevant portions of the Code, which were continued under FRPA, as of January 2004. No new FRPA requirements for visual quality had been brought into effect by the time the audit fieldwork was completed.

The audit was conducted in accordance with the Visual Quality Audit Methodology – July 2004 (Appendix A) and the Board's Compliance Audit Reference Manual, Version 6.0, and used a method designed by the Ministry of Forests (MOF) for assessing visual quality management as described in Appendix B.

Effectiveness

The Board is working in cooperation with the FRPA Resource Evaluation Working Group (a joint project of MOF and the Ministry of Water, Land and Air Protection) to facilitate the development of effectiveness criteria and indicators for each of the forest values identified in FRPA. For visual quality, this work mainly consists of draft procedures for evaluation of the effectiveness of visual management practices (see Appendix B). The procedures provide a basis for consistent assessment of the achievement of a visual quality objective, on a landform, from a specific viewpoint.

The Board developed the effectiveness criteria to be applied in this pilot audit. Before the audit commenced, MOF visual specialists and auditees reviewed the criteria and found them generally acceptable, with no concerns or recommendations for changes identified.

For the purpose of this pilot audit, the Board adopted the following audit effectiveness criteria as necessary attributes of an effective overall system of visual resource management:

1. Documented public input relating to visual quality has been fully addressed by operators through operational planning and forest practices.

2. Scenic areas[3] are designated over areas of visual sensitivity.

3. Visual quality objectives[4] (VQOs) or recommended visual quality classes[5] (RVQCs) within scenic areas are appropriate to manage visual quality.

4. Within designated scenic areas, visual management meets or exceeds established VQOs or RVQCs.

5. Within designated scenic areas, good landscape design is fully utilized to reduce visual impacts.

6. Auditees have management systems in place to achieve VQOs and RVQCs and they are working effectively.

The Visual Resource Management Framework

Visual resource management is the process of identifying and classifying scenic landscapes, and managing forestry activities on the landscape, to meet the visual needs of the public, visitors, and other resource users. It recognizes scenic landscapes as an integral part of the forest resource.

Active management of visual resources in BC formally began in 1981, when the Ministry of Forests published its Forest Landscape Handbook.

Key components of the visual management framework are:

- The identification of an area of land as visually sensitive from chosen viewpoints through a visual landscape inventory. Visually sensitive areas are designated as scenic areas for management purposes.

- A system of visual quality classes, based on studies of public perception of the acceptability of differing levels of timber harvesting activity in scenic areas.

- The assignment of a recommended visual quality class, or visual quality objective, to scenic areas to define how much alteration is deemed acceptable for each scenic area.

- The design of timber harvesting cutblocks, involving visual impact assessments[6], for assessment against the recommended visual quality class or established visual quality objective.

- Conducting the timber harvesting activity, causing the alteration to the scenic area.

- Assessment of performance.

Both the Code and FRPA have provisions addressing visual quality.

Visual quality is based on human perception and a person's reaction to alterations in the landscape. The visual resource management framework was developed to address this apparent subjectivity, by classifying various levels of forest alteration according to different levels of acceptability of visual alteration of scenic areas. It is based on a system of visual quality classes developed from studies of public perception of differing harvesting[7] levels (see Table 1).

Public perception studies show a direct correlation between visual quality class and public acceptance of forest alteration. Preservation, retention and partial retention are strongly favoured over modification and maximum modification classes[8]. Where harvesting occurs in areas visible to the public, partial retention is a benchmark level of alteration that most of the public finds acceptable.
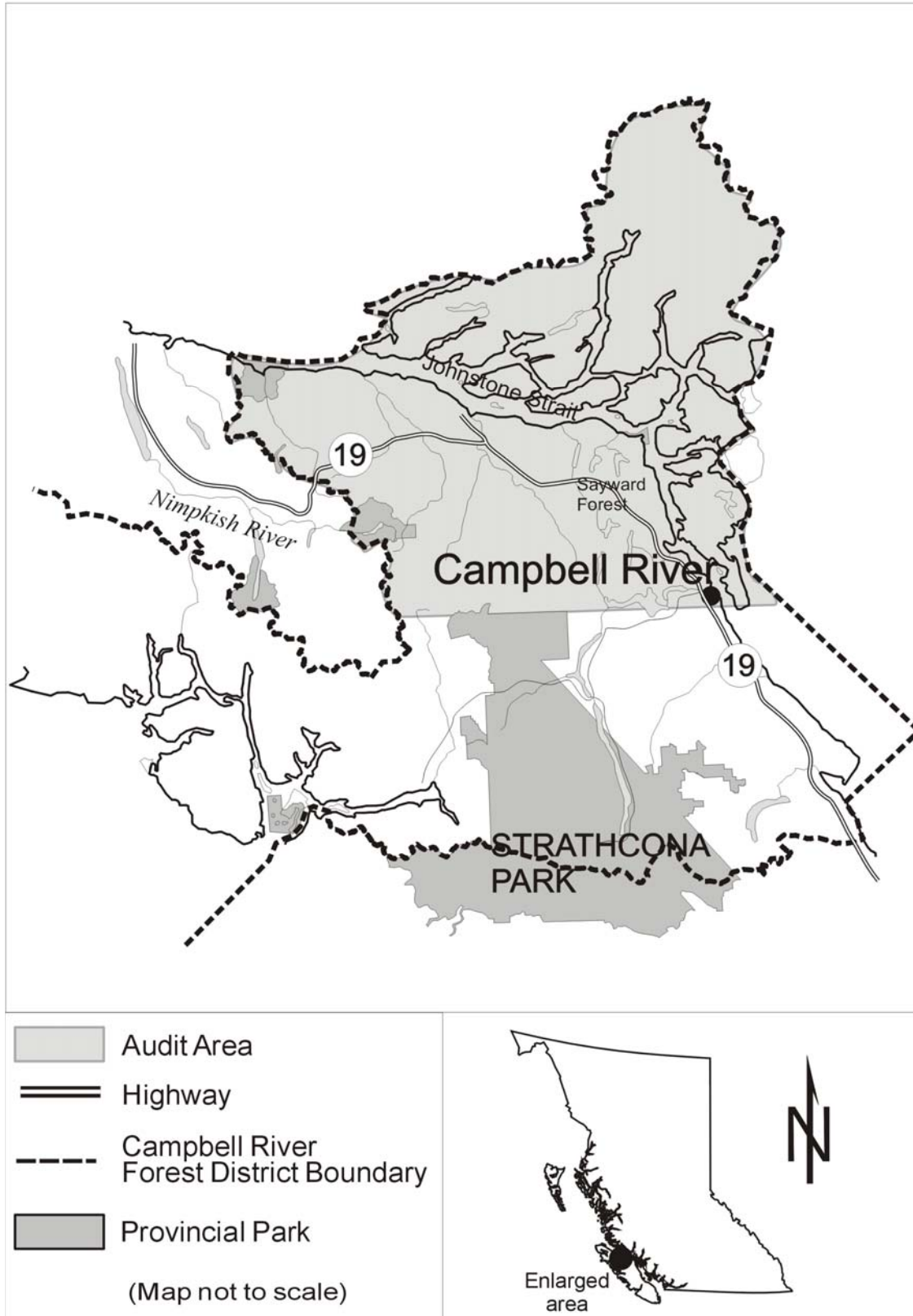
Table 1: Definitions of Visual Quality Classes

Visual Quality Class	Basic Definition A forest landscape alteration that is:
Preservation (P)	• very small in scale; and • designed to be indistinguishable from the pre-harvest landscape.
Retention (R)	• difficult to see; • small in scale; and • designed to mimic natural occurrences.
Partial Retention (PR)	• easy to see; • small to moderate in scale; and • designed to appear natural and not angular or geometric.
Modification (M)	• very easy to see and is either: - large in scale with a design that is natural in appearance; or - small to moderate in scale, but with a design that has some angular characteristics.
Maximum Modification (MM)	• extremely easy to see and one or both of the following apply: - the alteration is very large in scale; and/or - the alteration is angular and geometric.

Source: Adapted from MOF Procedures for Effectiveness Evaluation of Visual Quality Management working draft – July 2004 (Appendix B)

VQOs and RVQCs

The definitions in Table 1 apply to both visual quality classes and visual quality objectives. The key difference between them is that a visual quality objective is a legal resource management objective established by government, whereas a recommended visual quality class is a planning designation that is not legally binding. This is similar to the difference between a legal obligation in a higher level plan and its equivalent component in a strategic land use plan.

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Legend:
- Audit Area
- Highway
- Campbell River Forest District Boundary
- Provincial Park

(Map not to scale)

Enlarged area

Forest Practices Board Commentary

The Role of Criteria and Indicators

FRPA is results-based legislation, so compliance with FRPA is expected to involve achievement of results that are consistent with government's forest management objectives. FRPA establishes objectives for various forest values, and requires licensees to develop forest stewardship plans[9] that set out strategies or results consistent with these objectives. With the introduction of FRPA, new terminology and concepts are emerging that will in time become established in practice.

Provincially, there is considerable work underway through various initiatives, such as the FRPA Resource Evaluation Working Group and forest certification programs, which share a common need to interpret and explain FRPA's objectives in a way that can be understood and put into practice. The development of criteria and indicator sets in relation to objectives is a logical approach to this challenge.

> The Board intends to conduct broader assessments of licensees' forest planning and practices in relation to the achievement of government objectives. Some of the key changes in the Board's audit approach will be the use of criteria and indicators, examination of systems, and long form reporting. The new approach embodying all these elements could be considered a form of effectiveness auditing.

The Board considers that the application of criteria and indicators is an appropriate means to interpret and explain FRPA's objectives. The Board is revising its audit approach to be consistent with the results-based approach of FRPA. The Board anticipates applying criteria and indicators to facilitate results-based assessments, and to explain audit findings in a way that can be understood by the general public and by forestry professionals. This pilot audit is a part of the process.

Through this pilot audit of visual resource management, the Board has successfully completed an audit of the effectiveness of visual management practices in British Columbia, using criteria developed for the audit. The audit has confirmed the application of such criteria as a practical approach to such broader audit assessments, and as an effective basis for discussing audit findings with the parties audited, for fostering improved practices, and for reporting audit results.

Because this is a pilot audit, the Board solicited auditee input concerning the audit methodology and the criteria developed for it. Appendix C contains a summary of representations, as well as comments received regarding the draft report. The Board will develop future audits of visual resource management in consideration of this input. In addition, the experience gained from this audit will be used to further the Board's audit approach under FRPA, so that future Board audits can provide assurance about the results of forest practices in relation to government's forest management objectives. The Board also anticipates that these audit results will assist in

further development work, to establish effectiveness criteria and indicators for other FRPA forest values.

Audit Results

The results of this audit demonstrate that auditees conducted forest practices substantially in compliance with the visual management provisions of the Code, and are generally effective in managing visual resources.

The audit shows that a smaller proportion of the audit area has formal visual quality objectives, while the larger portion has been managed according to more flexible recommended visual quality classes. Nonetheless, the results show that both are managed diligently, with evident care in ensuring visual goals are met. The audit results clearly show that most areas examined not only meet the visual quality objective or class but also exceed it.

However, the audit results reveal some of the challenges in managing visual resources:

- Risk of blowdown appears to be a significant factor in designing cutblocks for visual management. Treatments such as partial cutting and irregular cutblock boundaries are excellent tools for managing visual resources, but are more vulnerable to blowdown, particularly in the exposed coastal region audited.

- When planning cutblocks, auditees need to ensure that they assess the expected result against the applicable visual quality class definition, rather than base the assessment on meeting a calculated percent alteration (refer to **Key Concepts and Terms**).

- While auditees generally succeeded in managing landscapes with multiple viewpoints, it is clearly difficult to ensure that a given visual quality objective is always achieved along a visual corridor. This remains a challenge to visual resource management, especially considering the many travel corridors in the audit area.

- The visual resource management framework for roadside and other foreground harvesting is not fully developed. A more effective method is required for assessing whether these alterations meet the assigned VQO. In the audit area, the highway corridor lacks a comprehensive strategy for managing the visual resources.

Compliance

The audit found that auditees' forest planning and practices complied in all significant respects with the Code's requirements for visual resource management.

Effectiveness

The audit found that visual resource management practices examined in the audit area were generally effective.

Table 2: Effectiveness conclusions by criterion

Effectiveness Criterion	Overall Conclusion
Documented public input relating to visual quality has been fully addressed by operators through operational planning and forest practices	The criterion is met. However, there was very limited documented public input. The criterion and the audit findings do not address the broader question of whether public expectations for visual quality are being met in the audit area.
Scenic areas are designated over areas of visual sensitivity	The criterion is largely met. Scenic areas appear to be well designated for marine areas and for lakeshore areas but are not fully in place on the highway corridor. Within the Sayward landscape unit, the highway corridor does not have a comprehensive visual management strategy. Some portions of the highway that are visible to travellers are not designated as scenic areas.
VQOs or RVQCs within scenic areas are appropriate to manage visual quality	The designations generally appeared reasonable in light of multiple resource needs. Areas with higher levels of traffic or recreational use are managed for higher levels of retention. However, the audit cannot conclude on the absolute appropriateness of VQO and RVQC designations.
Within designated scenic areas, visual management meets or exceeds established VQOs or RVQCs	Auditees met the assigned VQO or RVQC for 84 of 96 samples in the audit. Of the 12 samples that did not meet the RVQC, seven were within the numerical range for the class but did not meet the definition. Therefore, the audit found that, with the exception of managing some harvesting areas to meet the numbers instead of the definition, auditees were generally effective in meeting or exceeding the assigned RVQCs.
Within designated scenic areas, good landscape design is fully utilized to reduce visual impacts	Auditees for the most part utilized good landscape design to mitigate visual impacts. Risk of blowdown is a limiting factor for visual design in the audit area.
Auditees have management systems in place to achieve VQOs and RVQCs and they are working effectively	The criterion is partially met. All licensees had visual resource management systems in place during the audit period. There was a weakness in some licensee systems, because they did not require monitoring of the results of harvesting activity to ensure that the intended results were achieved

Legislative Considerations

Under the Code, scenic areas were established by the district manager, and VQO decisions were made by the district manager, or through a strategic plan approved by government. To address established VQOs in scenic areas under the Code, operators must do visual impact assessments that demonstrate that timber harvesting operations are consistent with established visual quality objectives, and incorporate assessment results into plans. They must conduct operations in accordance with those plans (FDPs and silviculture prescriptions), but there is nothing in the legislation that requires that they achieve the VQO. While the audit found that results were generally achieved within this legislative framework, it may be argued that the framework is not fully effective in that it leaves a gap, where a result may not be achieved with no consequence and no enforcement ability.

FRPA is designed as a results-based legislative framework. In general, results are specified in the legislation without prescriptive requirements detailing how results are to be achieved. FRPA incorporated a number of visual resource management requirements in December 2004 (subsequent to the audit fieldwork) in considerably more detail than the Code. FRPA now defines five categories of visually altered forest landscapes, which correspond closely to the five definitions of visual quality class used in the audit. FRPA also grandparents scenic areas and RVQCs, such as those in the audit area, that were established on or before October 24, 2002, as scenic areas and established VQOs. Under FRPA, the minister responsible for the *Land Act* establishes new scenic areas, and the minister responsible for the *Forest Act* establishes visual quality objectives through the *Government Actions Regulation*.

In a forest stewardship plan prepared under FRPA, an operator must specify results or strategies in relation to objectives such as VQOs, and the plan must be consistent with those objectives[10]. The operator must also achieve the intended results specified in the forest stewardship plan and carry out the strategies specified[11]. There is no explicit requirement to conduct visual impact assessments, nor is there a specific requirement in FRPA that an operator achieve a given visual quality objective.

Future audits will examine how effective the FRPA legislative framework is in enabling visual resource management to be achieved and enforced.

Recommendations

As provided by section 131 of FRPA, the Board recommends that:

1. MOF complete its visual resource management framework for roadside and other foreground alterations.

Regarding Recommendation 1, future audits of visual resource management will assess the status of the visual resource management framework for foreground areas.

2. In cooperation with applicable licensees and the public, the Campbell River Forest District should complete and implement a comprehensive strategy for managing visual resources along the Highway 19 corridor within the audit area.

In accordance with section 132 of FRPA, the Board requests that the Campbell River Forest District report to the Board on its progress in meeting Recommendation 2, by December 31, 2005. The district has informed the Board that it has already commenced work on this strategy.

These recommendations may also be relevant to MOF, and resource managers in other areas concerned with visual resource management along highway corridors and other foreground vistas.

The Board thanks the auditees for their participation and cooperation in this pilot audit. The Board would also like to commend the licensees on their work in relation to visual resource management. Licensees' harvest planning and practices generally reflect effective visual resource management according to the criteria employed.

Bruce Fraser, PhD
Chair, Forest Practices Board
May 20, 2005

Detailed Findings

1. Audit Scope

The audit examined activities and related operational planning in the Campbell River Forest District, on areas with harvesting activities, between January 2002 and August 2004 that were located within designated scenic areas. This is longer than the typical one-year period for most Board audits, because it allows more meaningful assessments about the effectiveness of forest practices in relation to visual quality values. Also, the Campbell River Forest District Manager made scenic areas and recommended visual quality classes known in a letter and map dated October 2, 2001, so January 2002 is a suitable starting point for the audit. Prior to this date, scenic areas in the district had not been formalized under the Code. Audit field work commenced August 16, 2004, and was completed on August 20, with clear sunny skies that provided ideal visual conditions for the audit.

The audit area consists of the northeast portion of the Campbell River Forest District (see map on page 5) and is characterized by three main visually significant components:

- The marine based area is an operating area for many pleasure craft and commercial and sport fishing boats. It is dominated by the cruise ship corridor through Johnstone Strait and includes several Discovery Islands. Most of the area visible from the water is second-growth working forest, with recommended visual quality classes (RVQCs) of partial retention.

- The Highway 19 corridor is the main travel corridor from Campbell River to Port Hardy and carries a significant volume of tourist traffic, primarily in the summer period. Most of the highway passes through mountainous working forest, with a mixture of partial retention and modification RVQCs.

- The Sayward Forest, west and north of Campbell River, is generally flat or gently rolling terrain with second growth forest, some of which originated from a large fire in 1938. Recreational users visit its numerous lakes and recreation sites extensively during the summer period. Visually sensitive areas are mainly partial retention VQOs.

Four major licensees operating in the area were subject to audit: International Forest Products Ltd. (Interfor), TFL Forest Ltd. (Timberwest), Weyerhaeuser Ltd., and Canadian Forest Products Ltd. (Canfor). BC Timber Sales (BCTS) for the Strait of Georgia Business Area was also subject to audit within the area. Western Forest Products Ltd. TFL 25, a portion of which lies within the audit area, was exempt from this audit because it had been audited by the Board in 2003.

Table 3: Parties and Cutblocks Audited

Auditee	Applicable licences	Number of cutblocks subject to audit[1]	Number of cutblocks audited
Weyerhaeuser	TFL 39, FL A19225	91	23
Interfor	TFL 45, FL A19232	72	21
Timberwest	TFL 47, FL A20913	30	10
Canfor	FL A19233	2	2
BCTS	Various TSLs	14	10

[1] Number of blocks with harvest activity since January 2002 within the audit area and within a scenic area.

The audit team consisted of:

- Russ Haas, RPF
- Glen Pilling, RPF
- Brian Sibley, CMA
- Jon Davies, CA
- Gerrard Olivotto, RPF

2. Audit Approach

The audit assessed compliance with the Code through examination of forest development plans, silviculture prescriptions, site plans and visual impact assessments, as well as field practices, using the methodology described in the following paragraphs.

Auditors assessed various aspects of effectiveness by examining the forest district's visual management framework, as well as auditees' plans, visual management systems and field practices.

The audit employed the MOF Procedures for Effectiveness Evaluation of Visual Quality Management Working Draft – July 2004 (Appendix B), developed by MOF visual resource specialists. These procedures were designed to assist evaluation of whether forest practices are meeting visual quality objectives (VQOs), or recommended visual quality classes (RVQCs), where objectives have not been established. They were field tested and revised in June and July 2004 and used in this audit, which served as a "pilot study" of the draft procedures.

Briefly, the field procedures and subsequent analysis consisted of the following steps:

- Visit the viewpoint to inspect the alterations of the landscape within the scenic area.

- Photograph the scene.

- Collect location information such as GPS coordinates, elevation, viewpoint importance, etc.

- Assess the view and classify it according to the visual quality class definition (refer to **Introduction**).

- Record design elements, such as edge treatments, position of alteration on landform, etc.

- In the office, measure the alterations on prints of the photographs and calculate percent alteration.

- Apply adjustment factors to design elements and calculate the adjusted percent alteration.

- Determine the adjusted visual quality class and determine the effectiveness evaluation (EE) rating.

In summary, the auditor compared the visual impressions recorded at the viewpoint, and the percentage alteration adjusted for visual design factors, with the established VQO or RVQC for the landscape. Achievement of the objective was rated on a five-point EE scale ranging from "well met" to "clearly not met."

The MOF's assessment methodology was developed as a draft in 2004. Therefore, auditees had not previously used it for their visual management activities that were subject to this audit. The visual quality class definitions used in the methodology are a refined version of the definitions in the Visual Impact Assessment (VIA) Guidebook[12], which operators used during the audit period.

Field samples were used to assess compliance results, and also to assess performance for a number of effectiveness criteria. A sample is a set of observations comprising a photo set, measurements, and assessment completed from a particular viewpoint. The sample may include one or more cutblocks, and more than one sample may be associated with a particular cutblock.

The audit assessed each sample relative to a specific viewpoint of the landform (foreground, midground or background) on which the alterations were located. The audit assessment method matches the pre-harvest design method used by licensees in their visual impact assessments of proposed cutblocks. As a result of comments received from MOF, the auditor conducted further analysis of compliance based on MOF inventory polygons, in line with current MOF procedures. The difference between these two approaches is explained in more detail in Effectiveness Criterion 4, under "Landform vs. Inventory Polygons." The results of the compliance analysis on the inventory polygon basis revealed insignificant differences from findings using the landform basis. The findings and conclusions in this report are based on using the landform as the basis of assessment.

3. Compliance

Compliance at the time of the fieldwork consisted of compliance with Code provisions, which were continued under FRPA as of January 2004. All activities subject to audit were conducted under Code forest development plans[13] (FDPs) and amendments. Transition provisions of FRPA require that these operations comply with the Code[14]. There were no forest stewardship plans[15] in place within the audit area during the audit period.

In determining compliance with Code requirements, the audit examined whether auditees:

- fulfilled requirements towards meeting established visual quality objectives;

- completed visual planning requirements in scenic areas; and

- met commitments to achieve recommended visual quality classes that may have been made in FDPs and silviculture prescriptions.

The assessments consisted primarily of examination of documents and field sampling. Table 4 sets out the plans audited.

Table 4: Plans Audited for Visual Resource Management

Auditee	Applicable licences	Forest development plans audited	Silviculture prescriptions audited	Site plans[16] audited
Weyerhaeuser	TFL 39, FL A19225	1	5	3
Interfor	TFL 45, FL A19232	2	15	3
Timberwest	TFL 47, FL A20913	1	2	2
Canfor	FL A19233	1	0	2
BCTS	Various TSLs	7	5	5

3.1 Compliance with Legal Objectives

The district manager made scenic areas and recommended visual quality classes known for the Campbell River Forest District in a letter and map dated October 2, 2001. Prior to this date, scenic areas in the district had not been formalized under the Code. Generally, these scenic areas and RVQCs are the basis for compliance with Code visual management obligations in the audit. The two exceptions are certain areas associated with the Vancouver Island Land Use Plan (VILUP), and the Sayward Landscape Unit Plan[17], both of which have legally established VQOs rather than RVQCs.

VILUP applies to the Vancouver Island and Quadra Island portion of the audit area. Government established resource management objectives on special management zones with primary visual resource values, effective December 1, 2000. These objectives require managers to "maintain the visual quality of known scenic areas in accordance with the recommended visual quality classes in the visual landscape inventory, until the district manager establishes visual quality objectives for the areas." This means that the areas must be managed as if the RVQCs were VQOs. Three special management zones are in the audit area (all under Timberwest's TFL 47), but only the one on Quadra Island had harvesting activity within the audit period.

The district manager made the Sayward landscape unit scenic areas and VQOs known, effective March 1, 2003[18], and operational plans submitted after July 3, 2003, were required to meet the

established VQOs. Weyerhaeuser, Interfor, BCTS, and Canfor had operations in the Sayward landscape unit that were required to meet these established VQOs.

The audit found that all operations audited met legal visual quality objectives established under VILUP and the Sayward landscape unit.

3.2   Compliance with Planning Requirements

The Code requires that forest development plans specify measures that will be carried out to protect visual resources. In addition, FDPs must identify scenic areas made known by government and address any written public input regarding visual resource management. If the cutblock is in a known scenic area with an established VQO, site level plans (both silviculture prescriptions and site plans) must have a visual impact assessment (VIA). The VIA must demonstrate that harvesting operations are consistent with the VQO for that area, as well as contain a statement that the plan is consistent with the results, or recommendations, of the assessment. An operator must use the most comprehensive and accurate information available, at the time that the plan was developed, in preparing any of these plans.

The audit found that Interfor, Timberwest, Canfor, and BCTS met planning requirements for visual resource management in the audit area.

Weyerhaeuser also met planning requirements for visual resource management in the audit area, with one exception. In its FDP, which is applicable to both TFL 39 and FL A19225, Weyerhaeuser did not identify scenic areas, as made known by government via the district manager's letter dated October 2, 2001. Instead, Weyerhaeuser used its own visual inventory, which differed in the locations of some scenic areas and some assigned RVQCs. Although Weyerhaeuser did not meet this planning requirement, the audit found that the differences between Weyerhaeuser's and the district managers designations were relatively minor. Consequently, this exception is not considered a significant non-compliance.

3.3   Compliance with Planning Commitments

As previously stated, scenic areas within most of the audit area were assigned recommended visual quality classes, rather than established visual quality objectives. The exceptions are for VILUP and the Sayward landscape unit (see **Compliance with Legal Objectives** section), which had established VQOs. Unless a commitment is made in an FDP or silviculture prescription[19] to meet a recommended visual quality class, it is not a legal requirement to do so. It is also not a legal requirement to make such a commitment in an FDP or silviculture prescription.

The audit found that FDPs prepared by Timberwest, BCTS, Interfor (for FL A19232 only), and Canfor contained clear commitments to meet RVQCs, whereas FDPs for Interfor's TFL 45 and Weyerhaeuser's operations in TFL 39 and FL A19225 did not. The audit found that where commitments were made in FDPs to meet RVQCs, they were substantially met (44 of 47 instances).

No audited silviculture prescriptions contained clear and unambiguous commitments to meet RVQCs.

3.4   Overall Conclusion Regarding Compliance

The audit found that auditees' forest planning and practices complied, in all significant respects, with the Code's requirements for visual resource management. In reference to compliance, the term "in all significant respects" recognizes that there may be minor instances of non-compliance, that either may not be detected by the audit, or that are detected but not considered significant non-compliance.

4. Effectiveness

In considering the effectiveness of forest practices for the purpose of this audit, it was necessary to define what constitutes effective practices in the context of visual resource management. To date, effectiveness criteria have been developed for a number of the key values identified in FRPA legislation[20] by the FRPA Resource Evaluation Working Group, consisting of MOF and the Ministry of Water, Land and Air Protection staff. For visual quality, work mainly consists of the previously described draft procedures for effectiveness evaluation, which do not in themselves establish effectiveness criteria for visual resource management. However, the procedures provide a method to enable a consistent assessment of one effectiveness criterion, which is the achievement of visual quality objectives at the site level.

For the purpose of this pilot audit, the Board adopted the following audit effectiveness criteria as necessary attributes of an effective overall system of visual resource management:

1. Documented public input relating to visual quality has been fully addressed by operators through operational planning and forest practices.

2. Scenic areas are designated over areas of visual sensitivity.

3. VQOs or RVQCs within scenic areas are appropriate to manage visual quality.

4. Within designated scenic areas, visual management meets or exceeds established VQOs or RVQCs.

5. Within designated scenic areas, good landscape design is fully utilized to reduce visual impacts.

6. Auditees have management systems in place to achieve VQOs and RVQCs and they are working effectively.

The audit examined licensees' performance during the audit period, in the audit area, in relation to these effectiveness criteria.

4.1   Effectiveness Criterion 1: Documented public input relating to visual quality has been fully addressed by operators through operational planning and forest practices

The primary test for this criterion was to collect and assess written public input to FDPs related to visual quality. The audit found a very low level of written public input to plans. Twelve FDPs were subject to audit, with two written comments--one from an environmental interest and one from First Nations. The applicable auditees addressed both submissions.

The low level of public input can be interpreted in more than one way. For example, it may be that the FDP review and comment process is not a particularly effective way of assessing public interest or concern about visual resources. The Board has previously commented about the adequacy of public review and comment into forest development plans[21], and found that while the public is usually provided with an adequate opportunity to review and comment on FDPs and amendments, the method of notification and the presentation of plan material may not always be appropriate for the intended audience. In a visual context, the standard solicitation of public input on an FDP may not receive the same kind of response as a more specific request for public input on visual quality, for the area in the FDP that is about to be harvested.

It may also be that the public is not unduly concerned about the way visual resources are managed in the area. In 1996, MOF did a public perception study[22] of clearcutting and visual quality, and stratified results by eight geographic regions in BC. The study found that Campbell River had consistently higher tolerance for clearcuts than all other regions. Visual evidence of harvesting has been a consistent feature in landscapes in the Campbell River area for decades.

Although not directly examined in the audit, the processes to complete both VILUP and the Sayward Landscape Unit Plan included public involvement. Therefore, the visual quality objectives established through these processes reflect, at least to some degree, public expectations for visual resource management in these areas.

Conclusion

The criterion is met. However, there was very limited documented public input. Neither the criterion or the audit findings address the broader question of whether public expectations for visual quality are being met in the audit area.

4.2   Effectiveness Criterion 2: Scenic areas are designated over areas of visual sensitivity

Auditors sampled extensively in primary travel corridors within the audit area, and made general comparisons between scenic area maps and what was actually visible.

Mapped scenic areas appear to adequately cover the visible land area adjacent to the marine corridors, as well as the perimeter of lakes visible from the lake surface, or lakeshore viewpoints

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within the Sayward Forest. No concerns were noted for designation of scenic areas in these portions of the audit area.

The highway corridor has a complicated array of scenic area polygons:

- Over the entire highway corridor, the scenic areas established by the district manager (DM) in October 2001 are based on a variety of source data. Most DM scenic areas on the highway corridor are mapped as if they were visible, if the roadside trees were removed (referred to as "trees down"). This approach has the benefit of maintaining a static scenic area on which to plan visual management, regardless of the size of the trees or other vegetation in the viewscape, which is addressed in each visual impact assessment.

- Within TFL 39, Weyerhaeuser has a visual landscape inventory where only those areas that are visible from the highway at the time the inventory is done ("trees up"), are identified as scenic areas. This can have the effect of leaving large areas outside scenic area mapping, due to visual screening by trees along the highway. When a roadside screen is removed, it opens up areas that had not been included in scenic area mapping and potentially not managed in consideration of visual impact. Once opened up, a re-inventory is required to redraw the scenic area.

- A third set of scenic area polygons, over the Sayward landscape unit, replaced pre-existing scenic areas with new legally binding ones in March 2003. Some portions of this highway corridor do not have a scenic area designation. The Sayward Landscape Unit Plan is not very clear about how visual quality is to be managed in these non-designated areas. The only reference to roadside views in the plan states: "Identify harvest opportunities that would open up or enhance the views along main road systems."

Conclusion

The criterion is largely met. Scenic areas appear to be well designated for marine areas and for lakeshore areas within the Sayward landscape unit.

Scenic area designations are not fully effective on the highway corridor. The "trees down" approach to scenic area mapping appears superior to the "trees up" approach. Within the Sayward landscape unit, the highway corridor does not have a comprehensive visual management strategy, and there are portions of the highway visible to travellers where scenic areas are not designated.

4.3   <u>Effectiveness Criterion 3</u>: VQOs (or RVQCs) within scenic areas are appropriate to manage visual quality

This criterion was assessed within the confines of the existing visual quality classification system. No assessment work was done regarding the appropriateness of the classification system itself. Auditors considered two aspects under this criterion: the appropriateness of managing with RVQC designations rather than VQOs, and the appropriateness of the assigned visual quality designations in various scenic areas within the audit area.

RVQCs vs. VQOs

In his October 2001 letter, the DM elected to zone scenic resources in the Campbell River Forest District by recommended visual quality class, rather than established visual quality objectives, to "maintain flexibility to respond to trends in scenic resource management and to maintain flexibility in responding to site specific operational issues." Alternatively, the DM could have established VQOs at that time. Given that the initiative was the first official declaration of visual resources under the Code in the district, the desire to maintain a level of flexibility is understandable.

One drawback of this approach, however, is that for RVQCs there is no legal obligation to complete VIAs (since there is no established VQO) and thus actively manage to meet the RVQCs, unless operators make such commitments in their FDPs. In addition, the lack of a legal obligation to manage for visuals compromises the district's ability to enforce visual management practices. The district is left with a reliance on operators to cooperatively manage for this resource. The audit found that, in spite of the absence of a legal obligation, operators did complete VIAs and did actively manage visual impacts to achieve RVQCs.

Effective March 1, 2003, the district manager made the Sayward landscape unit scenic areas and VQOs known, which established formal VQOs over about 112,000 hectares (about six percent of the total district area).

Conclusion

The audit did not detect an adverse impact to visual resources in the audit area, as a result of the district manager's strategy of using RVQCs rather than established VQOs.

Appropriateness of RVQCs and VQOs

Scenic areas on primary marine travel corridors are mapped with RVQCs of partial retention or retention. The retention designations are focused on "nodes" which are concentrated-use areas, often resort sites, as well as landforms that are viewed for long periods or from many different viewpoints. Outside the main travel corridors in the more remote inlets, such as Loughborough and Call Inlets, the designations are modification.

Similarly, both the older DM RVQCs and the more recent VQOs in the Sayward landscape unit call for partial retention or retention on most lakeshore scenic areas. RVQCs on the highway corridor are predominantly modification, with a few partial retention designations on scenic areas exposed to longer viewing.

Conclusion

The designations generally appeared reasonable in light of multiple resource needs. Areas with higher levels of traffic or recreational use are managed for higher levels of retention. However, the audit cannot conclude on the absolute appropriateness of the VQO and RVQC designations.

4.4 Effectiveness Criterion 4: Within designated scenic areas, visual management meets or exceeds established VQOs or RVQCs

There are 108 samples in total for the audit.

The assessment of forest landscapes, to determine if a VQO or RVQC is met, raised several issues that require consideration in the interpretation of audit results.

Landforms

A landform is a natural feature of the earth's surface, such as a mountain or a valley, and is the logical land area over which an assessment is based. Where landforms are well defined, such as a well formed mountain within a normal field of view, the assessment is more straightforward (see diagram in **Key Concepts and Terms**).

Figure 1 – A well defined landform at the east corner of Hardwicke Island. The RVQC for this area is retention.

Where there is an unbroken line of a hill for several kilometres along a marine corridor or highway, the landform that forms the base of the assessment is much more difficult to define. This presents a challenge for visual impact assessments prior to harvesting, as well as post harvest assessments such as those done in the audit. Some of the audit samples were in areas with poorly defined landforms. In these cases, the audit took the approach that the landform encompassed the observer's field of view, rather than splitting the view into arbitrarily smaller units.

Landform vs. Inventory Polygons

For this criterion, the audit assessed each sample relative to a specific viewpoint of the landform (foreground, midground or background) on which the alterations were located. The audit assessment method matches the pre-harvest design method used by licensees in their visual impact assessments of proposed cutblocks. However, the method of assessment used by MOF in the Campbell River Forest District is somewhat different.

The visual landscape inventory consists of polygons delineated on a map of the area. Each polygon has attributes describing visual landscape sensitivity, visual absorption capacity,

existing visual condition, and an assigned VQO or RVQC. Although an entire corridor may be a particular VQO (e.g. partial retention for areas visible along the cruise ship route through Johnstone Strait), the VQO is separately attached to each inventory polygon. In the district, the MOF assesses achievement of a VQO on a polygon-by-polygon basis. The district method corresponds to the modelling method used in timber supply analyses.

Inventory polygons do not match the landform as seen from a particular viewpoint, unless the inventory polygons were delineated from the same viewpoint selected during the assessment. This was usually not the case. Two problems can arise using an inventory polygon-based assessment:

1. The seen landform may contain more than one inventory polygon. The alteration may be located in one polygon. On the seen landform, the alteration might easily meet the objective of partial retention, but measured within the smaller-sized single polygon it may exceed that objective, and be in technical non-compliance. To avoid a situation of non-compliance, a licensee would need to distribute activities across the landform in a pattern governed by the inventory polygons.

2. The inventory polygon may wrap around the sides of the seen landform, due to common inventory attributes, with much of the polygon area not visible from the assessment viewpoint. In this case, an alteration which clearly does not meet partial retention from the viewpoint may be calculated to meet it, due to its small scale relative to the large polygon size.

Visual resource management is intended to provide an acceptable experience for the viewing public. The public sees the landform from a viewpoint. In both the above instances, licensee operations would be erroneously directed if the licensee expected compliance and enforcement assessment to be based on inventory polygons. The first case needlessly raises costs; the second case may permit excessive alteration. The audit concluded that the landform-based assessment, as used in the audit, is the preferred method. Ultimately, the public views a scene and reacts to it in a way that is not confined to an individual landform or to an inventory polygon on a map. As long as operators meet the objective from all viewpoints, visual management is effective.

Viewpoints

A viewpoint is the vantage point from which an assessment of the viewed alteration is made. For planning purposes, viewpoints are identified in the visual inventory, as are scenic areas. Some viewpoints are easily determined, such as a highway rest stop or a recreation site at a lakeshore. Sometimes viewpoints are quite difficult to assign, such as along a marine corridor or a section of highway, where there is arguably an infinite number of potential viewpoints as one travels along that corridor.

The distance of the viewpoint from a landform is a complicating factor. For example, in the marine or lake environments, it is possible to view an alteration on a landform from a long distance and move directly toward it so that eventually the view becomes a foreground view. As one moves, the alteration can change from a minor factor to a dominant one, and the visual

impact steadily increases as distance decreases. For this reason, it is common practice to use the midline of a water corridor as a basis to select viewpoints. The audit took the same approach.

Where multiple viewpoints are possible along a highway or mid-channel travel corridor, the audit took the view that the intended results (VQO or RVQC) should be met at any given point because the selection of such viewpoints can be essentially arbitrary. As auditors travelled these areas, they also sampled at points other than the viewpoints established in the inventory, if it appeared that visual impacts were greater at that point.

Viewpoint elevation is also a consideration. The perspective of a kayaker towards a landscape is quite different than from the upper deck of a cruise ship in a close or moderate distance view. Some visual impact assessments in the cruise ship corridor considered an elevated perspective, although it is not a requirement to do so. The audit undertook four additional samples at a 20- to 30-metre elevation to simulate a cruise ship perspective. Three of the four met the RVQC at both the cruise ship height and sea level. Other audit samples were taken at ground, lake, or ocean level.

The assessment considered viewpoint importance as well. In general, a viewpoint from a commercial tourism site is more important than a highway rest stop, which is more important than a sustained side view along a highway corridor. A failure to meet a given VQO from an important viewpoint is more significant than a failure from a relatively unimportant one. The audit recorded both viewpoint type and importance for each sample.

Roadside and Foreground Areas

The audit assessment methodology is not designed for foreground views. The definitions are designed for middle distance and background views rather than foreground views. In the audit, this applies to highway roadside harvesting where cutblocks are situated immediately adjacent to the highway corridor. For the nine samples with foreground views, the audit simply assessed

whether the roadside sample met the definition of the assigned VQO or RVQC.

The audit found that there is a lack of guidance available to operators in managing visuals for roadside harvesting. The MOF Visual Landscape Design Training Manual[23] contains general guidance on roadside design. However, at present there is no policy or procedure to assist the adaptation of VQOs to roadside locations. Consequently, operators have a difficult time designing roadside harvesting to

Figure 2 – A sustained view along Highway 19 to the southwest. The landform in the distance has a modification RVQC. Note the "green tunnel" effect at this location.

meet a given VQO and they, as well as enforcement agencies, have a difficult time comparing results with the VQO.

In the audit area, the audit found that the highway corridor did not have a roadside development strategy. There was no overall plan of how much of the corridor should be opened up at any given time. There is recognition of the value of opening vistas and breaking the monotony of what is predominantly a green tunnel. As mentioned, the Sayward Landscape Unit Plan comments on this notion. However, harvest planning and practices along the corridor appeared to be ad hoc, rather than conforming to an overall strategy for visual management.

There are many options for managing visual impacts of roadside blocks, including visual screening, avoidance of steep slopes, positioning roads and landings away from key visual areas, timely clean up of logging slash and rapid regrowth of vegetation. However, these techniques need to be complemented with a considered strategy of making harvesting visible to avoid the green tunnel problem.

Maintaining screening along the highway corridor can be difficult, because narrow strips of trees between the highway right of way and the harvest opening are extremely vulnerable to blowdown. Where the hydro right-of-way is on the same side of the highway as the opening, the practice of leaving visual screens can have a direct impact on hydro supply as a result of blowdown.

Figure 3 – A roadside cutblock along Highway 19. This area has a modification RVQC.

Definition vs. Numbers

The definition of a given visual quality objective (same definitions apply as for visual quality class – see **Introduction**) is the measure against which results are assessed. For clearcut areas, studies have found that each VQO corresponds to a range of visible alteration when measured from a specific viewpoint. The alteration of a landscape is measured by dividing the area altered

(visible logging or roads) by the total area of the landform and expressed as a percentage (refer to **Key Concepts and Terms**). The ranges for each VQO are:

- Preservation - 0% alteration visible
- Retention - 0 to 1.5%
- Partial Retention - 1.6 to 7.0%
- Modification - 7.1 to 18.0%
- Maximum Modification - 18.1 to 30.0%

The numerical assessment provides a reasonable predictor of the outcome. However, it is not the basis of determining whether the VQO is achieved. A VQO is achieved only if it meets the definition. The VIA guidebook states "it is imperative that all existing and proposed operations meet the basic VQO definition and exhibit elements of good visual design. The numerical assessment should be used only as a yardstick to help determine into which class the cumulative alterations on a landscape fall."
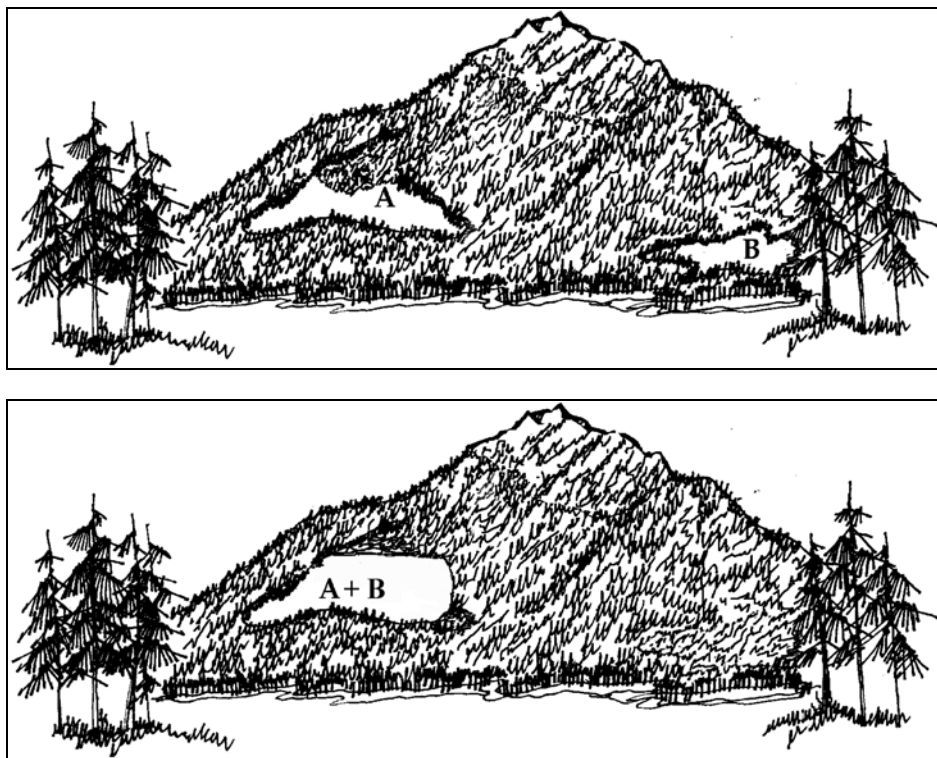

Figure 4 – Example of Definition vs. Numbers: Both drawings have 7 percent alteration visible, which is the upper "limit" for partial retention. In this example, the top figure meets a partial retention definition because the openings are small or moderate in scale. The lower figure meets a modification definition because the opening is large in scale and is somewhat angular in shape.

The audit found that several operators used the numerical assessment as a primary decision-making tool to predict the anticipated results of the planned operation. In a few cases, focus on numbers appears to have resulted in failure to achieve the VQO as assessed using the

definition. This happened most often when it was evident from the visual impact assessments that the upper limit of the range was the target.

Private Land

A challenge for managing visual impacts is the influence of harvesting on private forest land. A modest amount of private land is scattered through the marine corridors and along the highway corridor near Campbell River. For the most part, the public does not know whether a particular parcel of land is privately or publicly owned. Harvesting on private land outside tree farm licenses or woodlot licenses falls outside the jurisdiction of the Code and FRPA. The audit found a few examples of private land logging where the visual impact exceeded the VQOs in the vicinity (modification level in a partial retention area).

Large-scale private land logging can significantly influence harvesting options in the adjacent Crown forests, as well as create a negative impression of forest resource activity to the travelling public. If planners were able to discount the visual impact of private land harvesting, then Crown land harvesting options would not be constrained by that factor. However, current policy in the audit area, as expressed by the DM, is that operators must consider the visual impact of private land when planning harvest operations in visually constrained areas. This consideration also applies to forested First Nations reserve lands.

Assessment Results

Table 5 provides a summary of assessment results for the audit.

Table 5: Assessment Results

Auditee	Total # of Samples	Blowdown Samples[1]	Net Samples	Total # of Samples that Met VQO or RVQC	Total # of Samples that Did Not meet RVQC
Weyerhaeuser	36	5	31	27	4
Interfor	28	7	21	16	5
Timberwest	20	0	20	17	3
Canfor	2	0	2	2	0
BCTS	22	0	22	22	0
Totals	108	12	96	84 (87.5%)	12 (12.5%)

[1] Twelve samples applied to cutblocks that were harvested to salvage blowdown, or were substantially altered from their original configuration as a result of blowdown. They were netted out from the results, because the cutblocks were a response to a serious wind storm that occurred in the winter of 2001/2002, and are consequently not representative of operators' normal visual management practices.

The audit found that operators substantially met the assigned VQO or RVQC for 84 (87.5%) of the net 96 samples. The 12 samples that did not meet the assigned targets all had RVQCs rather than established VQOs. Table 6 outlines the instances where the auditee did not meet the assigned RVQC.

Table 6: Samples not meeting RVQC

Auditee	Total Samples Not Meeting RVQC	Discussion (R=retention, PR=partial retention, M=modification, MM=maximum modification)
Weyerhaeuser	4	• Two samples, applicable to the same block, meet M rather than PR RVQC. • One sample is roadside and meets MM rather than M (see Figure 3), although the viewpoint importance is low. • One sample meets M rather than PR, although from three other viewpoint locations the cutblock meets PR.
Interfor	5	• All five samples are in TFL 45. One sample meets PR rather than R and four meet M rather than PR. All five appear to be a result of focusing on the numbers rather than the definition, since all are close to or within the number range for PR.
Timberwest	3	• One sample meets M at a new viewpoint between two established water-based viewpoints where PR is met. • One sample meets M; is a cruise ship simulation; and is within the numerical range for PR, but does not meet the definition. The ocean level sample at the same location meets the PR objective. • One sample meets PR but not R (see Figure 1). It is within the numerical range for R but does not meet the definition.
Canfor	0	None
BCTS	0	None

Conclusion

In the audit, operators met the assigned VQO or RVQC for 84 (87.5%) of the net 96 samples. Of the 12 samples that did not meet the RVQC, seven were within the numerical range for the class but did not meet the definition. Therefore, the audit found that with the exception of managing some harvesting areas to meet the numbers instead of the definition, operators were generally effective in meeting or exceeding the assigned VQCs or RVQCs.

4.5   Effectiveness Criterion 5: Within designated scenic areas, good landscape design is fully utilized to reduce visual impacts

Design elements are very important in visual resource management. The public may respond more positively to a forest view that looks well managed even if it does not look "natural." Also, well-designed alterations have a higher likelihood of meeting a given VQO definition than poorly designed ones with the same percentage of alteration, as illustrated in Figure 4.

The importance of landscape design is clear when considering the cost of visual management. The requirement to manage a landscape to meet a given visual quality objective constrains the rate at which the visible area can be harvested. The more stringent the VQO, the greater the

downward pressure on the timber supply, thus creating a cost to forest management. Where visual constraints are widespread, such as within the audit area, it is more effective for forest managers to manage this cost by keeping visual harvesting levels close to the upper limit of the VQO, rather than to avoid harvesting in visually sensitive areas. Good visual design can allow the forest manager to harvest more timber from a landscape than if poor design is used. Consequently, consistent use of good design will lower the cost of managing for visuals by minimizing the timber supply impact of managing for visual resource values.

The assessment methodology considers seven design elements. Auditors rated each sample good, moderate or poor for each of the seven elements.

- Does the cutblock design respond to lines of force (topographic shape of the landscape)?
- Does the cutblock design borrow from the natural character of the landscape (shape and vegetation patterns)?
- Does the cutblock design incorporate edge treatments (feathered or wavy and irregular edges)?
- Distance from the viewpoint to the alteration (farther is better).
- Position of the alteration on the landform (away from the centre is better).
- Visual impact of roads and sidecast.
- Amount of within-block tree retention.

Overall, the audit found good design practices, particularly when comparing audit blocks to areas harvested prior to the audit period. The total sample base of 108 was netted down to remove certain samples, such as non-visible areas, alterations caused by blowdown, roadside alterations and private land alterations. The remaining 74 samples were assessed for design trends. Overall, the audit found the average design score to be midway between good and moderate.

In comparing design scores by VQO, the audit found that partial retention samples had an average score of good, and modification samples had an average score of moderate (there were only two samples of retention). This suggests that partial retention landscapes were better designed than modification landscapes.
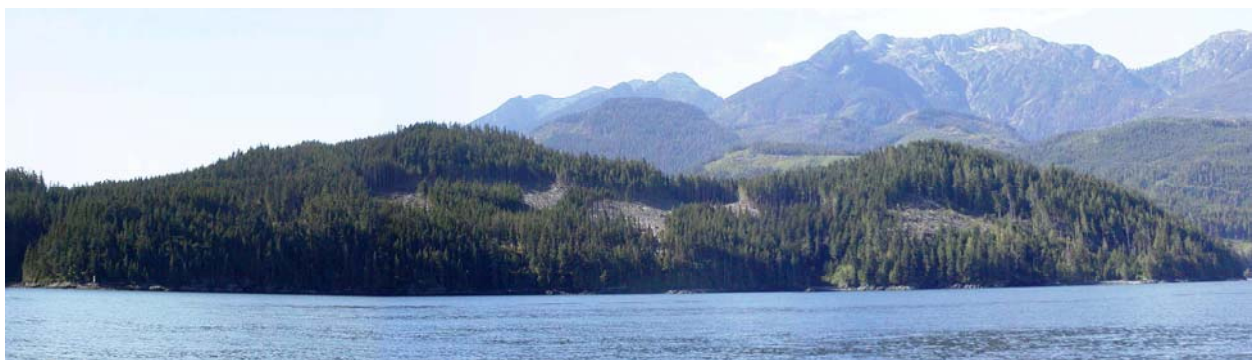

Figure 5 - example of well designed harvesting on a landform with a partial retention RVQC

A factor that influences landscape design in the audit area is risk of blowdown. The area is subject to heavy windstorms, particularly during the winter months, as evidenced by a severe winter storm in 2001, which caused a significant amount of blowdown in the audit area. In the audit, 12 of 108 samples were applicable to cutblocks harvested to salvage blowdown, or were substantially altered from their original configuration as a result of blowdown. This indicates that the options available to operators, to minimize the visual impact of harvesting are constrained by blowdown risk. Irregular block boundaries and partial cutting are treatments that can reduce visual impacts, but have a higher risk of blowdown.

Variable retention (VR) is a harvesting system developed to maintain structural diversity in a stand by retaining individual or groups of trees for a long period. Retained trees can be dispersed or aggregated into clumps. In a retention system, at least 50 percent of the cutblock is within one tree height of a standing tree. The VR initiatives in the audit area have had reduced success as a result of blowdown. Several of the blowdown samples in the audit area were originally harvested as VR blocks. Because of the risk of blowdown, there has been limited opportunity to use dispersed retention. Landscapes harvested using this technique tend to be seen more favourably by the public.

Conclusion

Auditees for the most part utilized good landscape design to mitigate visual impacts. Risk of blowdown limits options for visual design in the audit area.

4.6 Effectiveness Criterion 6: Auditees have management systems in place to achieve VQOs and RVQCs and they are working effectively

All licensees had systems in place to help manage visual resources. The audit did not examine systems closely enough to ensure they were working effectively, but did observe that they had the potential to be effective. In particular, visual impact assessments were done in all cases where harvesting was planned in scenic areas.

One weakness was that some licensees did not review the results of harvesting to ensure that the planned alteration was achieved. Some licensees did this on a sample basis. This weakness is mitigated by the fact that the visual impact assessments completed during design of the cutblocks are basically sound. The audit found that digital terrain models were often used in visual impact assessments, and were generally accurate in predicting the configuration of alterations on landforms.

Conclusion

The criterion is partially met. All licensees had visual resource management systems in place during the audit period. There was a weakness in some licensee's systems, because they did not require monitoring of the results of harvesting activity to ensure that the intended results were achieved.

4.7   Overall Conclusions Regarding Effectiveness

The audit found that visual resource management practices examined in the audit area were generally effective.

One aspect of operations which appears strong is that the intended results are achieved most of the time (87.5%), even though RVQCs rather than established VQOs were in place over most of the audit area. Auditees clearly demonstrated a substantial amount of effort devoted to managing visual impact of harvesting in the audit area.

The audit identified two aspects of visual resource management that are somewhat weak.

Managing visual impacts of roadside and foreground harvesting requires more development. The audit found that foreground harvesting is difficult to assess with respect to meeting a given VQO. The definitions are designed for middle distance and background views rather than foreground views. In addition, there is no apparent strategy for overall management of the visual impacts of harvesting on the highway corridor, such as how much area should be opened up at any one time.

For some operators, there appears to be excessive reliance on percent alteration as a means of determining whether a planned harvest will meet a given VQO. Ultimately it is the definition that must be met, as reinforced by the recent legislative changes where visual alterations are now legally defined. Operators should adjust their planning practices to ensure that the definition is used as a primary determiner of expected results.

Endnotes

1 In 2003, the Board conducted a pilot audit of stream riparian management in the Chilliwack Forest District and a pilot audit of forest soil conservation in the Mackenzie Forest District.

2 A silviculture prescription is a site-specific operational plan that describes the forest management objectives for an area to be harvested (a cutblock).

3 A scenic area is a visually sensitive area or scenic landscape identified through a visual landscape inventory or planning process approved or established by government. It is more precisely defined by regulation.

4 A visual quality objective is a legally established resource management objective established by government, or contained in a higher level plan, that reflects the desired level of visual quality based on the physical characteristics and social concern for the area. It is more precisely defined by regulation.

5 A recommended visual quality class is a planning designation describing the level of alteration that would be appropriate for a scenic area, considering visual and other values. It is not legally binding.

6 A visual impact assessment is an assessment carried out to demonstrate that timber harvesting or road operations are consistent with the established visual quality objective for a scenic area. The assessment simulates the visual effects of the planned operation on the landscape from one or more viewpoints.

7 BC Ministry of Forests, 1981, Forest Landscape Handbook.

8 BC Ministry of Forests, Nov 1996, "Clearcutting and Visual Quality – A Public Perception Study."

9 Under the *Forest and Range Practices Act* and its regulations, all major tenure holders–companies with logging rights on Crown land and the timber sales manager, BC Timber Sales–must prepare a forest stewardship plan. Government must approve this plan before forestry operations take place. The forest stewardship plan is a cornerstone of the results-based approach governing forest practices under the Act. In their plans, tenure holders must state explicitly how they will address government objectives for key forest values, such as soils and wildlife. The forest stewardship plan may be in place for up to five years and may be extended for a further five years while its counterpart under the Code, the forest development plan, could be in place for only up to two years. The new plans are intended to encourage longer-term planning, contribute to sound forest management, reduce paperwork and encourage innovation.

10 FRPA, Section 5.

11 FRPA, Section 21.

12 BC Ministry of Forests, January 2001, Visual Impact Assessment Guidebook, Second edition.

13 A forest development plan is an operational plan that provides the public and government agencies with information about the location of proposed roads and cutblocks for harvesting timber over a period of at least five years. The plan must specify measures that will be carried out to protect certain forest resources prescribed by regulation. It must also be consistent with any higher level plans. Site-specific plans are required to be consistent with the forest development plan.

14 FRPA, Sections 191 and 192

15 See endnote 9.

16 See endnote 2.

17 MSRM, Feb 27, 2003 Sayward Landscape Unit Plan, http://srmwww.gov.bc.ca/cr/downloads/srmp/sayward/Saywardlup.pdf

18 Letter dated February 26, 2003 from the district manager to readers

19 Under the Code there is a requirement to follow a silviculture prescription but there is no direct requirement to follow a site plan.

20 FRPA, Section 149.

21 FPB Special Report, 2000, "A Review of the Forest Development Planning Process in British Columbia," http://www.fpb.gov.bc.ca/special/reports/fdp/index.htm

22 See endnote 8.

23 BC Ministry of Forests, 1994, Visual Landscape Design Manual.

Appendix A:

Visual Quality Audit Methodology – July 2004

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Visual Quality Audit Methodology – July 2004

Introduction

This document presents the Board's approach and methodology for auditing visual quality management. Visual quality is one of the 11 key values referenced in the *Forest and Range Practices Act* (FRPA) legislation.

The Board's authority to undertake this audit is set out in Section 122(1)(a) of FRPA.Comparable provisions are set out in section 214 (with respect to the transitional period under FRPA) and section 11 of the *Forest Practices Board Regulation* (with respect to activities before January 31, 2004).

The approach and methodology described in this document is scheduled for testing through the conduct of a pilot audit.

Part A of this document provides an overview of the conceptual and technical approach to auditing visual quality management. Included in this part is discussion of the audit objectives and significant scope and design issues. Part B of this document sets out for an audit as a whole the key audit stages.

The approach and methodology contained in this document reflects the Board's transitional audit approach which is intended to be consistent with the results-based approach of FRPA. Key aspects of this approach include:

- the use of criteria and indicators to assess and report on licensees' forest planning and practices in relation to the achievement of government objectives; and

- the examination of licensees' systems to gain assurance related to the achievement of government objectives.

The Board recognizes that conducting a pilot audit of visual quality management during the transition period from the Code to FRPA may result in limited opportunity to assess forest planning and practices that reflect FRPA requirements. Many licensees may choose to operate under approved operational plans until they are required to prepare a forest stewardship plan (by December 31, 2005). In addition, to assess whether visual quality practices have been effective, in most cases more than one year's harvesting and road construction activity will be assessed. Therefore, the majority of planning and practices subject to audit will have been conducted under the Code.

The Board has determined that it will be more meaningful to the public, and to the success of FRPA and improvement of management of visual quality, for the Board to examine the results

of forest practices and the management systems used to achieve those results. The examination of effectiveness criteria in the pilot visual quality management audit will enable the assessment of key aspects of visual quality management.

A) Overview of Conceptual and Technical Approach

Audit Objectives

There are two objectives of this visual quality management audit:

1) to reach a conclusion regarding the level of compliance with the visual quality requirements of FRPA within the audit unit; and

2) to assess and conclude on the effectiveness of managing visual quality where forest practices have occurred.

In determining compliance with FRPA requirements, the audit will examine two primary aspects; whether appropriate planning (visual impact assessments) have been completed and followed in scenic areas; and whether higher level plan requirements for visual quality management have been met.

In considering the effectiveness of forest practices, it is necessary to define, for the purpose of this audit, what constitutes effective practices. To date, effectiveness criteria have been developed for a number of the key values identified in FRPA legislation by the FRPA Resource Evaluation Working Group (FREP Group). For visual quality, the work undertaken to date primarily consists of draft procedures for effectiveness evaluation of visual quality. These procedures have undergone field testing and revision in June and July 2004 and are designed to assist evaluation of whether forest practices are meeting visual quality objectives (VQOs) or visual quality classes (VQCs), where objectives have not been established. The procedures do not in themselves establish effectiveness criteria for visual quality management. However, they provide a framework to enable a consistent assessment of achievement of objectives in an inherently subjective realm.

Over time, the Board anticipates continued development and refinement of visual quality effectiveness criteria. In the interim, the following general effectiveness criteria warrant consideration and therefore the audit will assess them where possible:

- Documented public input relating to visual quality has been fully addressed by operators through operational planning and forest practices in audit units.

- Within audit units, scenic areas are designated over areas of visual sensitivity.

- Within audit units, VQOs (or VQCs) within scenic areas are appropriate to manage visual quality.

- Within designated scenic areas, visual management meets or exceeds established VQOs or VQCs.

- Within designated scenic areas, good landscape design is fully utilized to reduce visual impacts.
- Auditees have management systems in place to achieve VQOs and VQCs and they are working effectively.

More broadly defined criteria, such as "visual impacts in scenic areas are acceptable to the public" are outside the scope of this audit.

Audit Unit & Auditees

Expressing an opinion regarding the level of compliance by an individual tenure holder may not provide an adequate level of information to the public about visual quality management. For example, in scenic areas where VQOs have not been formally established, there is no legal requirement to achieve a given visual quality. It is possible for a licensee to comply with legal requirements for visual management without achieving effective visual management. Audit examination and reporting on practices relating to the previously listed effectiveness criteria will provide the public a more complete accounting of visual management in the audit area.

It is important that the audit unit in a visual quality management audit is of sufficient size to assess the impacts of forest management for key visual values. The audit unit will include operations of several licensees in the area to enable a more comprehensive assessment of visual quality management.

Given the interrelated roles of licensees and district staff, the audit unit may include activities of both licensees and of the district manager. For example, the district manager may have specific responsibilities to ensure that VQOs are met in scenic areas with more than one operator. The district manager has also had responsibility for identifying key visual quality values. The district manager's activities related to these responsibilities will be assessed as part of the pilot visual quality management audit.

Audit Approach

A key focus of both compliance and effectiveness evaluations will be on the results of forest practices on visual quality. The audit population will consist of the scenic areas within the audit unit, each with an associated VQO or VQC. Samples will be assessed on whether an objective or class has been met considering the visual effects of harvesting, road construction and other forest practices on applicable landforms.

In addition, compliance evaluations will examine adherence of applicable approved operational plans to FRPA and related regulations, and to the visual quality components of any higher-level plans or objectives relevant to the audit area.

Effectiveness evaluations will focus on the indicators previously stated.

Audit assurance will be obtained through:

- detailed examinations of auditee systems used to manage visual quality
- examination of visual inventory information, operational plans and associated visual impact assessments and relevant public input
- examination of a sample of scenic areas containing visual effects from forest practices, through photography, measurement of change and consideration of other aspects of the change, including design
- evaluation of the appropriateness of the VQO or VQC of scenic areas, including those with or without change

The sampling methodology will be risk-based, taking into consideration these and potentially additional risk criteria:

- preliminary assessment of auditees' visual management systems strengths and weaknesses
- general level of exposure of the site to the public
- level of harvest activity
- visual absorption capacity of the site
- sites of elevated public interest or concern

Audit Period

The Board's compliance audits completed to date have generally included a period of activity of approximately one year. This enabled the audits to examine the full spectrum of an auditee's forestry activities in its normal course of business (operational planning through harvesting and silviculture activities). This was desirable in that the objective of the compliance audits is to express an opinion as to the auditee's level of compliance.

To enable meaningful assessments about the effectiveness of forest practices in relation to visual quality values, a longer audit period is required. Activities from January 1, 2002, onwards will be examined. Further, approved cutblocks that have not yet been harvested will be considered as well. This will enable a full assessment of the achievement of current forest practices in meeting visual quality objectives.

Audit Reporting

Under the Code, the Board utilized a two-report model for audits: a Report from the Auditor and a Report from the Board.

Under FRPA, the Board will utilize a one-report model comprising three main sections: Board commentary, audit findings and conclusions, and auditee commentary. This longer-form

reporting model is designed to provide more comprehensive information about the results of forest practices and examination of management systems.

In the Board commentary section, Board members' comments about the results of the audit are reported, including recommendations. For example, the Board may wish to comment on the results of an audit in relation to other audits conducted or developing trends.

In the audit findings and conclusions section, findings and conclusions about licensees' compliance with FRPA as well as performance related to effectiveness criteria are reported. Audit findings may include the impact of forest practices on forest resources, findings in relation to criteria, findings in relation to government's objectives and comments on licensee management systems. This section will include a description of any non-compliance observations that are considered significant.

It is intended that in the auditee commentary section, a summary of the auditee's response to the audit be reported. Before releasing its audit reports, the Board will provide auditees an opportunity to review and make comments about the results of the audit. A summary of these comments may be included in the Board's audit report.

Similar to existing process, the Board will provide for representations by third parties who may be adversely affected by the content of a Board audit report.

Audit reports will continue to be publicly reported.

B) Summary of Key Audit Stages

This section provides an overview of the stages of an audit visible to auditees. The technical design of the audit develops, generally from the scoping visit through to completion.

1. **Selection of the Forest District** *(Timing: June 2004)*
    - A district is randomly selected from the population of forest districts.

2. **Audit Notification** *(Timing: week of July 5, 2004)*
    - The district is notified in writing by the Director of Audits that it has been selected as the audit unit for a pilot visual quality management audit.
    - All licence holders in the district (except those subject to audit during the past 5 years or those with an AAC< 10,000m3) are notified in writing that the district has been selected as the audit unit for a pilot visual quality management audit and that they may be audited.

3. **Scoping visit** *(Timing: week of July 19, 2004)*
    - Audit team members attend a meeting with district staff to discuss the audit and answer any questions related to the audit.
    - Auditors collect scenic area, licensee operating area and recent forest practices information to assist in identifying potential audit units in the district.

4. **Selection of Audit Unit** *(Timing: by July 23)*
    - An area within the district is selected by the auditors as the audit unit.

5. **Notification of Forest Licence Holders** *(Timing: week of July 26, 2004)*
    - Licensees within the audit unit are notified of the location(s) and planned examination dates of the activities.

6. **Pre-Site Visit Audit Procedures** *(Timing: week of August 3, 2004)*
    - Auditors gather preliminary information at the licence holders' offices, or information to be sent to the FPB office and interviews are held with licensee staff over the phone.

7. **Audit Field Work** *(Timing: week of August 16, 2004)*
    - The audit team carries out the Board's audit procedures.

8. **Wrap-up Meeting** *(Timing: immediately following completion of audit field work)*
    - The audit team meets with auditees to discuss the audit steps completed and remaining.

9. **Analysis** *(following audit fieldwork)*
    - The audit team analyses photographic record of visual disturbance etc , develops findings and conclusions, etc.

10. **Exit Meeting(s)**
    - Auditors attend a meeting with auditees to discuss the results of the audit (Note: consideration will be given to holding individual exit meetings where circumstances warrant).

11. **Draft Audit Report**
    - The lead auditor and audit team prepares the draft audit report and distributes it to the auditees for review and comment.

12. **Final Audit Report**
    - The lead auditor and audit team finalizes the audit report.

Appendix B:

Procedures for Effectiveness Evaluation of Visual Quality Management – Working Draft – July 2004

Procedures

for

Effectiveness Evaluation

of

Visual Quality Management

Working Draft

July 2004

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Figures and Tables

Visual Quality Effectiveness Evaluation

1.0 Introduction

This document describes recommended procedures for evaluating whether forestry operations are meeting established visual quality objectives in designated scenic areas. The procedures describe how to measure viewing conditions for clearcut, patch-retention and partial cut alterations in mid-distance view, 1 to 8 km from the viewpoint. The procedures are not calibrated to assess foreground views of alterations immediately adjacent to the viewpoint. Alterations located adjacent to a highway, for example, would be assessed on a case by case basis, using professional judgement and recognized design techniques such as the ones described in the Visual Landscape Design Training Manual (1994) rather than the quantitative measurements described in this document.

These procedures are applicable to the majority of current alterations in scenic areas in British Columbia. The procedures may be used at the operational level to monitor individual openings, at the TSA or TFL level to audit particular licensees, or rolled up at the regional or provincial level to give broad indication of recent success in managing and conserving viewscapes.

1.1 Forest and Range Practices Act replaces Forest Practices Code
The Forest and Range Practices Act (FRPA) became law in British Columbia in 2004. FRPA replaces the Forest Practices Code of British Columbia Act (the Code) over a two-year transition period. The transition from the Code to FRPA eases planning requirements, and places greater reliance on the integrity of resource practitioners. Forest practices will be assessed on results, rather than on adherence to prescriptions. The transition from the Code to FRPA does not change existing land use designations, and does not change existing management objectives within designated areas.

The Ministry of Forests, the Ministry of Water, Land and Air Protection, and the Forest Practices Board will evaluate the effectiveness of recent forest management activities. Effectiveness in achieving goals will be evaluated for the eleven resource values listed in FRPA, Section 149. One of the legislated resource values is visual quality.

1.2 Visual Quality
Visual quality is a resource value that is managed in designated scenic areas. All scenic area designations and Visual Quality Objectives (VQOs) that were in effect on September 31, 2003 were grandparented into the new legislative framework and are continued under FRPA, Sections 180-181.

Three types of pre-FRPA scenic area designation exist:
- Scenic areas with Recommended Visual Quality Classes assumed to be current management by district managers.
- Scenic areas with VQOs established by the District Manager under the Code.
- Scenic areas with VQOs designated as part of higher level plans such as Land and Resource Management Plans.

New scenic areas will be established under authority of FRPA, through the Government Actions Regulation. The Minister of Sustainable Resource Management will make future scenic area designations. The Minister of Forests will then establish visual quality objectives within those areas.

1.3 Effectiveness Evaluation
The purposes of effectiveness evaluations (EE) are to:

1. Determine if practices are meeting desired objectives, and
2. Determine if policies and guidelines lead to meeting desired objectives.

An EE is meant to be broad in scope. For efficiency and economy, EEs may be based primarily on ocular estimates rather than field measurements. Ocular estimates are the preferred method for assessing visual quality.

Different people, depending on their background, experience, and occupation, view the same landscape scene differently. Recent research has shown that the positive or negative impressions of each sampled focus group are well correlated. Larger alterations are less preferred, and alterations of similar scale but with visible roads or sidecast are less preferred. Alterations with significant tree retention, and alterations designed to fit well with the landscape, are more preferred across all groups surveyed.

The EE for visual quality seeks to answer the broad question "How well are we managing and conserving views in designated scenic areas?" and also the more specific question "Did recently harvested units achieve the established visual quality objective?" The EE is not intended to answer questions such as "Were the pre-harvest visual impact assessments accurate?" or "Were the planned and approved prescriptions carried out?" Those are compliance and enforcement questions.

The EE evaluator will visit viewpoint(s) to inspect the visual impact of the post-harvest forest alteration. Photographs and site notes will be taken at each viewpoint. The EE evaluator will not visit the harvested unit.
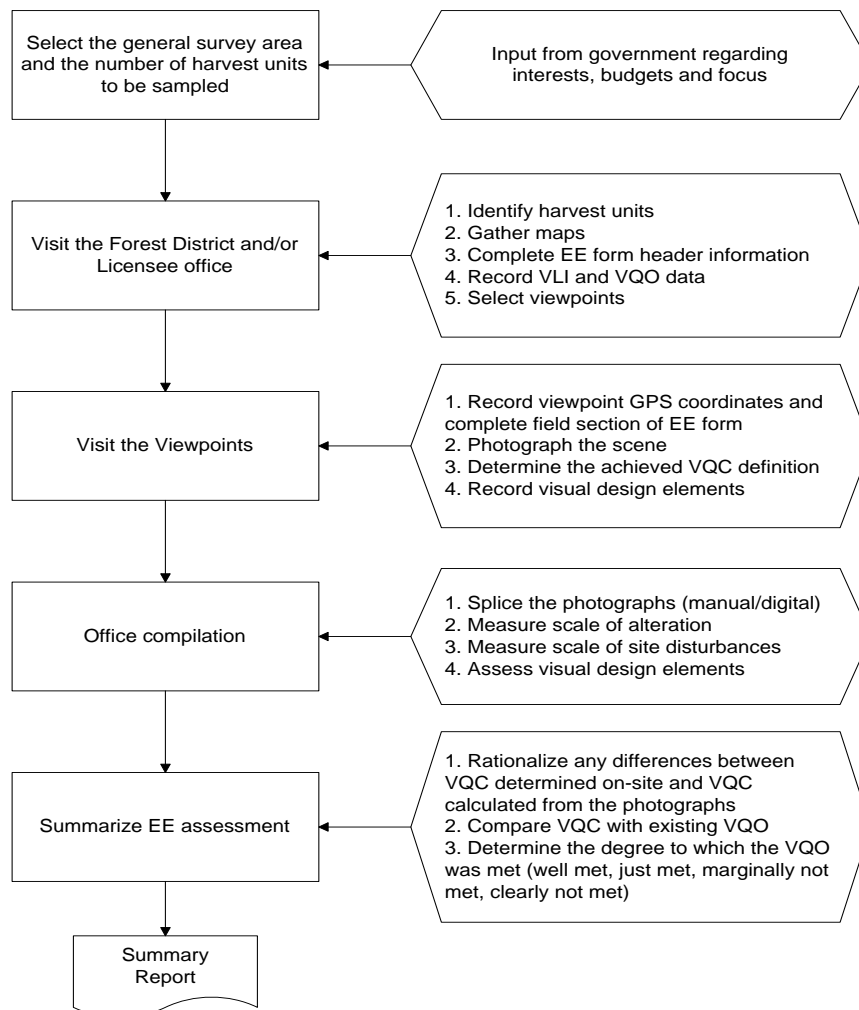
2.0 Visual Quality Effectiveness Evaluation Procedure

The following provides a step-by-step guide to conducting a visual quality effectiveness evaluation. The recommended procedure consists of three physical phases.
1. Visit the Forest District and/or Licensee office,
2. Visit places from which the harvested units may be best viewed, and
3. Compile the findings at the evaluator's place of business.

Figure 1 illustrates the visual quality EE process. The Ministry of Forests or the Forest Practices Board will specify the area to be evaluated and the number of samples to collect, after consultation with key District staff. Effectiveness is generally evaluated at the landscape level and may involve multiple cutblocks, viewpoints and licensees. Examples of evaluation areas would include a long stretch of highway corridor, an entire valley, a lakeshore, or a coastal inlet or channel.

Figure 1. Flowchart of the EE procedure

Select the general survey area and the number of harvest units to be sampled

Input from government regarding interests, budgets and focus

Visit the Forest District and/or Licensee office

1. Identify harvest units
2. Gather maps
3. Complete EE form header information
4. Record VLI and VQO data
5. Select viewpoints

Visit the Viewpoints

1. Record viewpoint GPS coordinates and complete field section of EE form
2. Photograph the scene
3. Determine the achieved VQC definition
4. Record visual design elements

Office compilation

1. Splice the photographs (manual/digital)
2. Measure scale of alteration
3. Measure scale of site disturbances
4. Assess visual design elements

Summarize EE assessment

1. Rationalize any differences between VQC determined on-site and VQC calculated from the photographs
2. Compare VQC with existing VQO
3. Determine the degree to which the VQO was met (well met, just met, marginally not met, clearly not met)

Summary Report

The evaluation is conducted at all important viewpoints. Existing non-visually greened-up alterations in the subject landscape are considered in the evaluation. Alterations are considered greened-up when the public would perceive them as a regenerating forest, i.e. when the new forest cover is sufficiently tall to obscure stumps, logging debris and bare ground.

The evaluation assesses each view using two independent measures:

1. Meeting the basic visual quality class (VQC) definition, and
2. Meeting the percent perspective landform alteration criteria, incorporating consideration of the quality of visual landscape design.

The final rating combines the two measures. The achieved VQC under the basic definition is compared with the VQC determined using perspective measurement and adjustment for the scene attributes. The final EE rating for each harvested unit is determined by reconciling any differences between the two assessments from each viewpoint in a brief written rationale.

2.1 Office Visit

The evaluation commences with a visit to the Forest District office and/or Licensee office where records for the interest area are maintained. The following materials should be assembled, with preparation by the district or licensee contact before the evaluator's arrival.

2.1.1 Gathering Maps
For each alteration of interest, acquire copies of:
  1. the silviculture prescription map (pre-FRPA) or the site plan map available from licensees once they prepare a Forest Stewardship Plan,
  2. a topographic map of the landform showing the location of the harvested unit,
  3. an area overview map showing highways, waterways, and viewpoints,
  4. a copy of the Visual Landscape Inventory (VLI) map for the area at an appropriate scale (typically 1:50,000 or larger).

The VLI map will show the base data considered in the establishment of VQOs. It will also show key viewpoints, screening, and viewing opportunities that a licensee would have considered in planning the alteration.

2.1.2 Completing the EE Form Header
Appendix 1 provides the form to use for Visual Quality Effectiveness Evaluation. One form is completed for each of the viewpoints selected for evaluation. The first section records general information about the alteration(s) selected for evaluation. Identifying information about the alteration (Forest District, licensee, harvest unit coding, etc.) should be filled out at the office.

2.1.3 Recording VLI and VQO data
On the form in Appendix 1 (the "EE form") determine and record for each alteration:
 1. the base VLI data,
 2. the update date of the VLI,
 3. the established VQO, and
 4. the date of VQO establishment.

Confirm the established VQO and date of establishment by checking the source documents, i.e. the VLI database, a District Manager letter, a higher level plan, or the Forest Development Plan or Forest Stewardship Plan in effect. In the absence of established VQOs, record the recommended visual quality class (RVQC) considered current management.

2.1.4 Selecting viewpoints
Following the office visit, the evaluator will travel through the areas of interest to photograph and assess the visual impact of the harvested units. The office visit provides an opportunity to tentatively select the location(s) from which each harvested unit is most visible. The viewpoint(s) may show on the VLI map, or may reflect other view locations that were chosen at the pre-harvest design phase. Key district staff familiar with the areas of interest will recommend additional or better viewpoints if necessary. Examples of viewpoints selected for evaluation (those with significant public use) would include a long stretch of highway leading toward the harvest unit, a rest stop, a recreation site, a settlement, or a tourist-related commercial enterprise.

Visual Impact Assessment (VIA) packages were a pre-harvest requirement for operations in scenic areas with established VQOs since 1995. These documents, accessible from licensees, may assist in selecting critical viewpoints. VIA packages contain maps showing important viewpoint locations. They also show the output from computer or manual simulations of the proposed alteration, overlaid on a perspective view of the landform, from each viewpoint location.

The intent of the visual quality EE assessment is to efficiently obtain an overview answer to the question of whether VQOs are being met in a scenic area. To that end, it is not necessary to select every viewpoint that may be shown on a VLI map or chosen in the VIA package for the pre-harvest design phase. Most alterations are assessed from single, primary and representative key viewpoints.

2.2 Field Visit

Following the assembly of information at the office, the second step of the evaluation procedure is to visit each key viewpoint to observe the alteration. Weather should be clear (90% cloud free), and the scene well illuminated for optimal photography. Illumination is strongest in the summer months. East-facing units are best viewed in the morning, and west-facing units are best viewed in the afternoon. High-use traffic areas on major thoroughfares can be important viewpoints. Evaluators should wear bright safety

vests and use traffic cones when stopped and working along highways. District staff who assisted in information assembly may benefit by attending the viewpoint visit. The following describes the tasks to complete at each viewpoint location.

2.2.1 Completing the field section of the EE form
Using the Visual Quality Effectiveness Evaluation form (Appendix 1), enter data describing the viewpoint location including GPS coordinates and elevation, viewing direction, and distance to the alteration.

The importance of the viewpoint is recorded on the form using a five-point scale. The scale is calibrated to the viewing duration:

(1) glimpse view, less than 10 seconds,
(2) sustained side view,
(3) sustained focal view, travelling toward the alteration for more than one minute,
(4) viewpoint is at a rest stop, campsite, or other static short-term view location,
(5) viewpoint is the location of a community, commercial tourist-related enterprise, or other static long-term view location.

Viewpoint importance is used to weight the EE ratings obtained from multiple viewpoints in the event that individual EE ratings differ. Viewpoint importance may also be used to weight the aggregated EE survey results for a complete scenic area or travel corridor.

2.2.2 Photographing the scene
Record the perspective view of the alteration from the viewpoint. High-resolution digital photography (TIFF format), 35 mm print film, or video imaging may be used. Cameras should be mounted on a stable tripod, to ensure the clearest possible image of the landscape. The alteration is photographed to show its setting, the landform on which it is located, using an equivalent to 50 mm lens. This may necessitate a series of overlapping photographs (25% overlap minimum) to capture the entire scene. The photographs will be spliced together to provide a broad panorama. The alteration should also be photographed at a zoomed-in scale to show any within-block visual influences such as roads, tree retention and feathered edges.

2.2.3 Assessing the Basic VQC definition
The evaluator will use the written definitions of visual quality classes (Table 1) to determine the visual quality class achieved on the landform, and refine the determination as being toward the low, mid or upper range for the class. For example, if an alteration is rated as PR, is it closer to R, or M, or somewhere in between? Circle the location along the scale line on the form that best represents what is seen. Record on the form aspects of the scale and/or design of the alteration and its surroundings that caused it to meet the low or high end of a particular VQC. Other existing non-green alterations on the landform must be considered in the evaluation.

Table 1. Definition of Visual Quality Classes

Visual Quality Class	Symbol	Basic Definition
Preservation	P	"preservation" means an alteration of a forest landscape resulting from the presence of cutblocks or roads, such that when assessed from a viewpoint that is representative of significant public viewing opportunities, the alteration is (a) very small in scale, and (b) designed to be indistinguishable from the pre-harvest landscape;
Retention	R	"retention" means an alteration of a forest landscape resulting from the presence of cutblocks or roads, such that when assessed from a viewpoint that is representative of significant public viewing opportunities, the alteration (a) is difficult to see, (b) is small in scale, and (c) has a design that mimics natural occurrences;
Partial Retention	PR	"partial retention" means an alteration of a forest landscape resulting from the presence of cutblocks or roads, such that, when assessed from a viewpoint that is representative of significant public viewing opportunities, the alteration (a) is easy to see, (b) is small to moderate in scale, and (c) has a design that appears natural and is not angular or geometric;
Modification	M	"modification" means an alteration of a forest landscape resulting from the presence of cutblocks or roads, such that, when assessed from a viewpoint that is representative of significant public viewing opportunities, the alteration is very easy to see and is either (a) large in scale with a design that is natural in its appearance, or (b) small to moderate in scale but with a design that has some angular characteristics;
Maximum Modification	MM	"maximum modification" means an alteration of a forest landscape resulting from the presence of cutblocks or roads, such that, when assessed from a viewpoint that is representative of significant public viewing opportunities, the alteration is extremely easy to see and one or both of the following apply: (a) the alteration is very large in scale; (b) the alteration is angular and geometric;

2.2.4 Assessing Visual Design

The viewpoint visit provides an opportunity to assess the visual design of the alteration. Using a description of key design concepts and principles (see the Visual Landscape Design Training Manual, 1994, pages 49 – 63, and the Visual Impact Assessment Guidebook, 2001) answer the following questions by providing a Good, Moderate, or Poor rating on the EE form:

1. **Does the alteration respond to the major lines of force?** Opening boundaries should respond to topography by pushing up in hollows and dropping down on ridges. Lines of force would be rated Good if there is a strong response, and Poor if there is little or no response. If visual force lines are not apparent on the landform (i.e. due to lack of undulation or undulation being obscured by residual trees) the rating would be neutral, or Moderate.
2. **Does the alteration borrow from the natural character of the landscape?** Does the shape of the alteration reflect the quality of shapes found in the natural landscape (rounded curvilinear shapes on rounded landforms; spikey more jagged shapes in more rugged terrain) and does the opening respond to natural vegetation patterns and openings in both in scale and shape?
3. **Have edge treatments been incorporated?** Edge treatments include two aspects – feathering to soften the transition between the alteration and the unaltered forest, and the use of irregular or wavy boundaries. If both aspects are present the rating is Good, if one aspect is present the rating is Moderate, and if neither aspect is present the rating is Poor.
4. **How far is the alteration from the viewpoint?** The distance from the viewpoint can significantly influence public perception of an opening. Foreground openings are difficult to integrate because all the detail is visible. Distant openings are much easier to integrate because less detail is visible. The distance factor is rated Poor if less than 2 km, Moderate if from 2 to 5 km, and Good if over 5 km distant.
5. **What position does the alteration occupy on the landform?** If an opening occupies the center of a landscape in direct view it would rate Poor for position. Openings located lower down and to one side of a landform are more comfortable and are rated higher.

Each design component is assigned a score of –1 if Good, 0 if Moderate, or +1 if Poor. The sum of the five components is entered in section 2.3.3(e) on the EE form.

2.3 Office Compilation of Results

Following the viewpoint visit, photographs of the alteration, in its landscape context, are measured to confirm the decision about the VQC achieved using the Basic definitions.

2.3.1 Confirming Visual Design
The five components of the design of the alteration were assessed during the viewpoint visit. Adjustments to the initial ratings may be done in the office using the spliced photomontage and zoomed-in photographs.

2.3.2 Assessing the Initial VQC Rating
The Initial VQC rating is assessed by measuring the scale of alteration on the landform and comparing the result with the percent alteration ranges in Table 2.

Step 1: Percent alteration measurement
The scale of alteration is expressed as the percentage of the visual unit or the landform occupied by the alteration(s) as assessed in perspective view from the viewpoint using the photographs. Portions of the landscape screened by vegetation, and natural non-green areas such as mountaintops and rock outcrops, are excluded from the landform measurement. Other existing alterations on the landform without visually effective green-up are measured and added to the subject alteration percentage in assessing the overall visual condition of the view. See Appendix 4 for the methodology for measuring and calculating percent alteration. Measurements are also made of the extent of site disturbance (roads, landings, sidecast, and mass wasting) outside the alteration.

Measurements are made using prints (at least 8x10s) of the photography. The digital photographs or the prints may need to be spliced together to capture the entire scene from each individual viewpoint. A computer GIS system or a planimeter (manual method) is then used to determine the scale of the alteration within the landscape, and the scale of site disturbance and tree retention. Use of a digital planimeter, or computer-GIS functionality, is the preferred method for calculating the scale of alteration. Manual dot grid estimates are not accurate enough for effectiveness evaluation.

There are three vegetation components in an alteration in perspective view: the green forest canopy, tree trunks, and bare ground. The current definition of "altered area" only considers bare ground. Exposed tree trunks are excluded from the alteration measurement.

The measurements from the photographs are entered on the EE form in section 2.3.2:

a.) Percent of the landform altered by recent and any older openings without visually effective green-up in place.
b.) Percent of the landform outside the alteration in visible access roads.

The percentages are added and used in Step 2 below to determine an Initial VQC rating.

Step 2: Comparing Alteration Percent with Table 2

Table 2 lists the scale of alteration that generally achieves the specified VQC according to past experience and visual quality studies done in the province of British Columbia. Compare the percent alteration obtained in Step 1 above with the numbers in Table 2 and enter the resulting "Initial VQC "on the EE form.

Table 2. Percent alteration ranges for Visual Quality Classes.

Visual Quality Class	Alteration percent of landform in perspective view
P - Preservation	0
R - Retention	0 – 1.5
PR - Partial Retention	1.6 – 7.0
M - Modification	7.1 – 18.0
MM - Maximum Modification	18.1 – 30.0

2.3.3 Assessing the Adjusted VQC Rating

The numbers in Table 2 provide average results from public perception studies and do not explicitly account for site disturbance, tree retention, or design features. These other attributes of the scene also contribute to the overall visual impact, either negatively or positively. Negative visual influences include visible roads and sidecast. Positive visual influences include good design and tree retention. For example, if an alteration has good design, and tree retention of upwards of 25%, it can occupy up to 10 to 11% of a landform and still achieve PR in a public perception survey. If an alteration has visible roads, landings, sidecast, and/or mass wasting, it may occupy only 4 to 5% of the landform but still be rated M by the public.

The "Adjusted VQC" calculated on the EE form accounts for these influences. The initial percent alteration figure measured on the photographs is adjusted upward and downward, depending on the degree of positive and negative visual influences. Three aspects of the visual scene are assessed on a qualitative scale, and assigned points (the "Adjustment Factors") according to the following method:

c.) Account for roads, landings, and site disturbance within opening:

	Adjustment Factor
If no roads or sidecast are visible	0
If roads or sidecast are visible but subordinate in the scene	+1
If roads or sidecast are significantly visible, but small in scale	+2.
If roads or sidecast dominate the scene	+3.

d.) Account for tree retention:

	Adjustment Factor
Less than 15% tree retention (rated Poor)	0
Tree retention levels between 15% to 22% (rated Moderate)	-1
Greater than 22% tree retention (rated Good)	-2

e.) Account for design:

Five components of Design were rated in section 2.2.4 and assigned a score of -1 points for Good, 0 points for Moderate and +1 point for Poor. The sum of these scores is used as the Adjustment Factor for Design.

Negative adjustment factors reduce and positive factors increase the percent alteration impact measured from the photographs. The "Adj. Factors" on the form are summed to derive a total adjustment point score. This sum is referred to as "Y" on the form, and the percent alteration measured from the photographs (section 2.3.2) is referred to as "X". The two are combined in the formula: $X*(1 + 0.14*Y)$ to determine an "adjusted" percent alteration figure. This number is compared with the average percent alteration values in Table 2 to indicate the Adjusted VQC.

The purpose of the formula is to include the adjustment and scale it across the range of alteration percents. The adjustment factors are calibrated to adjust correctly, according to recent studies, for site disturbance, tree retention and visual design influences at an alteration level of approximately 7% of the landform (the transition between Partial Retention and Modification VQCs in Table 2). The formula uses the number 0.14, the reciprocal of 7, to increase the adjustment at higher alteration levels and decrease the adjustment at lesser levels of alteration.

The Adjusted VQC is recorded by circling on the VQC scale line (in section 2.3.3 of the form) the location of the adjusted percent alteration value resulting from the formula. The result, lying in the P-R-PR-M-MM range, will usually be close to that determined using the Basic VQC definition in section 2.2.3.

2.3.4 Procedures for partial cut alterations

Partial cut alterations are those with a distributed residual forest canopy that has lesser density than the unaltered forest. The visual impact of the alteration is dependent on the amount of volume or number of trees retained on site, the size of residual tree crowns, and the height of the residual trees. The procedure for evaluation of partial cut alterations is similar to that used for clearcut or variable retention alterations.

Partial cut alterations may be assessed for their Basic VQC using the written definitions (Table 1). The evaluator's visual impression is recorded on the scale line in section 2.2.3 of the form, as per standard procedure.

The Adjusted VQC is determined using a two-step "visual equivalent to clearcut" procedure.

Step 1: Determine visual percent volume removal
The evaluator will use a set of calibrated colour photographs (Appendix 3) to make an ocular estimate of the percentage of volume that was removed during harvesting. This estimate will sometimes vary from the data in a post-harvest timber cruise, due to the visual effects of slope, canopy conditions, species and other factors. Texture and permeability of the residual canopy are compared with the photographs to provide a visual percent volume removal estimate, to the nearest 10%. Estimated residual tree height, to the nearest 5 m, is also recorded on the EE form.

Step 2: Determine the "visual equivalent to clearcut" percent alteration number
Table 3 provides a grid of percent alteration numbers that are based on research regarding the likelihood of achieving a target VQO using a partial retention harvesting system. The table represents a 50% confidence level that the alteration will be visually equivalent to a clearcut with the specified level of alteration. The shading in Table 3 highlights VQC classes, with the darkest shade representing expected achievement of R, the mid-shade representing achievement of PR, and the unshaded portion achieving M.

Using estimated percent volume removed and residual tree height from Step 1, the evaluator will determine from Table 3 the "visual equivalent to clearcut" percent alteration value for the partial cut alteration. At very low retention levels (<15%) consideration must also be given to the scale of the alteration. The value determined from Table 3 is entered on the EE form, and then adjusted using the factors described in section 2.3.3. The resulting Adjusted VQC is recorded using the numeric position on the scale line, as per the procedure for clearcut alterations.

Table 3. Visual equivalent to clearcut percent alteration factors for partial cut alterations.

		Mean height (m) of residual trees									
		5	**10**	**15**	**20**	**25**	**30**	**35**	**40**	**45**	**50**
	10	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.6	0.8	1.1
	20	0.1	0.1	0.2	0.3	0.5	0.7	0.8	1.1	2.0	2.6
Volume	**30**	0.2	0.2	0.3	0.5	0.7	1.0	1.2	1.6	3.2	4.0
removed (%)	**40**	0.3	0.4	0.6	0.9	1.5	2.4	2.8	3.2	4.5	5.3
	50	0.4	0.5	0.9	1.3	2.6	3.8	4.4	5.0	5.8	6.5
	60	1.0	1.2	1.6	2.2	3.3	4.4	5.2	6.0	6.9	7.8
	70	1.5	1.6	2.3	3.0	4.0	5.0	6.0	7.0	8.0	9.0
	80	3.0	3.3	4.1	4.8	5.7	7.0	7.5	8.5	9.5	10.5
	90	4.5	5.0	5.8	6.5	7.3	8.0	9.0	10.0	11.0	12.0

2.3.5 Determining the EE rating for the landform

Compare the Basic VQC determined using the VQC definitions with the Adjusted VQC derived using percent alteration measurements and adjustment factors. The two evaluation methods will usually result in similar ratings, although they may lie on either side of a class boundary.

The effectiveness of achieving the visual quality objective for the subject landform can then be determined. On a five-point scale, the effectiveness ratings are:

- 5 = well met,
- 4 = met,
- 3 = borderline,
- 2 = not met,
- 1 = clearly not met.

If both evaluation methods indicate achievement of the visual quality objective, the EE rating is 5 if in the middle to lower end of the alteration range for the class and 4 if one or both methods score in the upper end of the range for the class. If results using the two methods straddle a class boundary (i.e. one method achieves the high end of PR, the other the low end of M) then the EE rating for a landform with a PR objective would be 3, borderline. If both methods indicate non-achievement, the EE rating is 2 or 1, dependant on how far outside the objective class that the percent alteration is rated.

2.3.6 Allowance for over-ride

In cases of significant conflict between results from the two evaluation methods, the Basic VQC is considered more important. For example, an alteration that occupies only 4% to 5% of a landform (mid PR Initial VQC) may be so angular/geometric that it is rated high M or even MM for the Basic VQC. In this case, with a visual quality objective of PR, the objective was clearly not met. However, the ratings straddle a class boundary and the procedures would indicate "borderline". The final section of the EE form allows the evaluator to over-ride the EE rating determined by the procedures, if necessary, and provide a rationale for having done so.

3.0 Summarizing the EE ratings for the Scenic Area

Section 2 described procedures for assessing the degree to which visual quality objectives have been met on a specific landform and from individual viewpoints. Alterations that have been assessed from multiple viewpoints are reconciled, using viewpoint importance, to derive an overall EE rating for each landform. Once this is done, and each landform in a scenic area has been individually rated, the final step in the EE process is to aggregate results across a district, or within a TSA or TFL.

The Ministry of Forests and the Forest Practices Board have collaborated in developing these procedures. The procedures have been tested and refined using photographs of recent alterations. The procedures were further refined in a field test. The next step is to

conduct a pilot project that evaluates a complete scenic area. The pilot project will include tests of alternative aggregation methods, further calibration of the percent alteration adjustment factors, and refinement of Table 3.

Current proposals for methods to aggregate EE results for a scenic area include the following:

- Take a simple average of EE scores across all landforms
- Weight the average by the area of each landform in plan view
- Weight the average by the area of each landform in perspective view
- Weight the average by viewpoint significance

Alternatively, or additionally, an aggregate EE score may be described as a percentage of samples that meet the objectives for the scenic area. The summary report for a scenic area may also summarize specific attributes recorded on the form, to explain reasons for achievement or non-achievement of the objectives.

4.0 Discussion

The procedures described in this document have two components. The first component uses the definitions of visual quality classes (Table 1) to determine a Basic VQC. The second component uses measurement and adjustment to confirm or modify the Basic VQC. Where the two components result in different conclusions, the Basic VQC is the primary conclusion.

The assessment of design elements (section 2.2.4) considers five primary attributes. Other design elements include factors such as the visibility of tree boles, texture and colour contrast, and the presence of water bodies. These issues are largely addressed by the inclusion of "distance from the viewpoint" as a modifying attribute.

References:

B.C. Ministry of Forests. 1994. Visual Landscape Design Training Manual. Recreation Branch. Victoria, B.C.

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_____. 2001. Visual Impact Assessment Guidebook. Victoria, B.C.

_____. 2002. Predicting the Visual Impacts of Retention Cutting. Forest Practices Branch. Victoria, B.C.

Province of British Columbia. 2004. Forest and Range Practices Act. SBC 2002, c.69. Victoria, B.C.

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Appendix 1
Visual Quality Effectiveness Evaluation Form
(To be completed from each viewpoint selected for evaluation)

2.1.2 Header Information (Office)

Forest District _____   Sample No. _____

Licensee _____   Date of Field Evaluation_____

Licence No._____   Evaluated By:_____

CP/Block _____

General Location _____   Signature: _____

2.1.3 VLI Information (Office)

Date of Update _____

Polygon No. _____   **Established VQO** _____

EVC _____   Date of Establishment _____

VAC _____   Source Document_____

VSC _____   _____

2.2.1 Viewpoint (Field)	2.2.2 Photography (Field)
Viewpoint No. _____	Roll No. _____ ID Nos._____
GPS Northing_____	Digital Photo ID Nos:_____
GPS Westing _____	
Elevation (m) _____	Viewpoint Importance: (Low) 1 2 3 4 5 (High)
Viewing Direction _____	
Viewing Distance _____	Viewpoint Description _____

2.2.3 Assess Basic VQC (Field)

Alterations meet which Basic VQC definition? Circle where in the range for that VQC:

Basic VQC: P   R   PR   M   MM

|----|----|-----------|-----------|----------------|----------------|----------------|----------------|-------->

Notes:: _____

2.2.4 Design Observations (Field)	2.3.4 Partial Cut Alterations
<u>Design Elements:</u> G (-1) M (0) P (+1)	Partial cutting
Response to visual force lines _____ _____ _____	% removed _____
Borrows from natural character _____ _____ _____	
Edge treatments incorporated _____ _____ _____	Average tree height (m) ____
Distance from the viewpoint _____ _____ _____	
Position on the landform _____ _____ _____	Clearcut equivalent ____ % alt.

2.3.2 Assess Initial VQC (Office)	
a) % of landform altered by openings: _____	$X = (a+b) =$____% alteration
b) % of landform in access roads (outside openings) _____	**Initial VQC**:_____

2.3.3 Assess Adjusted VQC (Office)

c) Impact of roads, side cast, etc. (within openings)	Calculate Adjusted %
o none o subordinate o significant o dominant Adj. Factor _____	alteration:
d) Tree retention: o Good o Moderate o Poor Adj. Factor _____	
e) Design (enter total from 2.2.4 above) Adj. Factor _____	$X*(1 + 0.14*Y) =$ _____
Total adjustment: *Y = (c+d+e)* Adj. Total _____	

```
---------------------------------------------------------------------------------------------------------
Adjusted VQC:  P    R              PR                     M                          MM
               |----|----|------------|------------|----------------|----------------|----------------|----------------|-------->
Adjusted %alt:  0   1.5           4            7             12            18            24            30   ++>
```

2.3.5 Determine EE rating for the Landform by comparing Basic VQC with Adjusted VQC (Office)

1.   o Clearly not met   (Neither method indicates VQO achievement, both are far from class boundary)
2.   o Not met   (Neither method indicates VQO achievement, but both are close to class boundary)
3.   o Borderline   (One method indicates VQO achievement, one does not)
4.   o Met   (Both methods indicate VQO achievement, but one or both are close to the high end)
5.   o Well met   (Both methods indicate VQO achievement and are on the low or mid range for the class)

2.3.6 Allowance for over-ride

Over-ride EE _____
Rationale for over-ride _____

Appendix C:

A Summary of Representations and Comments Received on Draft Report

Appendix C:
A Summary of Representations and Comments Received on Draft Report

International Forest Products Ltd.

Landform vs. Inventory Polygons and Viewpoints

We find the discussion on page 20 and 21 to be important and one that has greater implications on future management practices than addressed in the report. As we have discussed, Interfor fully supports the idea of managing to the landform opposed to the inventory polygon. We agree with the Board's finding that concludes that the landform-based assessment is the preferred method of managing visual resources. Managing to the inventory polygon can cause the problems you have identified in the two examples; however, we would suggest to you that the problem has not developed in practice because the District's RVQC's has allowed problematic blocks and polygons to be dealt with on a case-by-case basis.

Looking forward into a fully implemented FRPA regime, we foresee the flexibility provided by RVQC's being reduced as inventory polygons might become legal polygons with individual objectives. Also, we believe the Board can make a stronger linkage between landforms, FRPA objectives and known viewpoints. Managing the visual resource from known viewpoints on a landform-based assessment is the path to success under FRPA as it will align the desired outcomes with points of measurable results. The desired viewpoint experience must be the focal point of resource management, not the inventory polygon. In this context, a viewpoint experience could be the static view of a landform from a single viewing point or it could be a dynamic view of a changing landform along feature with common, definable properties. An example of a lineal viewpoint feature could be Highway 19 or Johnstone Straights; each has users with predicable visual expectations that are can be defined and managed for without placing spatial polygons on a map.

The report's discussion on viewpoints on page 21 makes no linkage between the importance of defining the desired viewpoint experience and the relation to the landform management, an opportunity missed. Interfor understands that the Board at times prefers to remain neutral on advocating future policy, but Interfor believes that it is in the best interest of the public to at a minimum explore shifting the management regime as suggested above.

Interfor would like to suggest that this issue be included in three areas of the report where it is absent:

- In the list of challenges of managing visual resources. In this list, the problem could be worded verbatim.

- In the FRPA Section 131 recommendations. The board could use this opportunity to suggest to the Ministry of Forests that they explore the options for managing visuals

under FRPA from a viewpoint experience, landform measurement model, opposed to the spatial inventory polygons.

- The overall conclusions regarding effectiveness. In this context, the issue could be worded as a concern regarding an observation that may limit future effectiveness.

The discussion on managing viewpoints to the worst case scenario is concerning in that it important not to lose the linkage to viewpoint importance. It would be nice to add a concluding comment in this section that leads the reader to understand the resource managers strive to manage to the worse case alteration but it is a balancing act with viewpoint importance and other factors such as elevation. One can always find that one bad view of a block, and we need to be careful not to set the public expectation higher than is reasonably possible for forest managers to achieve.

Criterion 6 – Management systems

There is a good opportunity to add some commentary in this section on how Licensee's manage for visuals using Digital Terrain Models. Further, presenting a sample DTM graphic and post harvest audit photo could enhance the report and help the public better understand why the weakness referred to on line 856 partially is mitigated.

Recommendations

We find the page 9 recommendations to be somewhat incomplete. We have suggested above that the landform vs inventory polygon issue be added to the list. We also believe there is a good opportunity to recommend to forest managers at large that the visual resource should be managed by the definition, not purely to the numbers. We feel that this is just as important an issue as both the landform issue and the roadside/highway corridor issue.

Table 6

For the south TFL 45, 70 - 75% of the total land base is within the known scenic area, is prone to wind throw, and has been managed to the maximum range of the visual quality class in order to meet AAC targets.

Overall Conclusions regarding Effectiveness

Please consider changing the term " excessive reliance" on percent alteration, to "focus" on percent alternation. To keep it in perspective, most of the blocks in the audit have been approved by ministry staff who used a quantitative assessment as the main target in visual management.

Weyerhaeuser Ltd.

Some of these comments have previously been communicated during other phases of this audit. They are only repeated here in order to ensure that the Board as a whole has an opportunity to consider them.

Effectiveness Criteria #5:

The treatment of the criterion is improved. However, in our view, this criterion remains redundant. In reaching a decision on the fourth criterion, the "landscape design" employed by licensees has already been considered in relation to visual impacts. We suggest that the 5th criterion may be useful in evaluating the efficacy of landscape design in the context of landscape utilization or the "timber supply" cost of visual management. This is brought out in the report. The audit methodology would need to be modified to address that specific facet of visual management.

The report still understates the magnitude of the 2001 windthrow event. A storm event that results into some 600,000 m3 of blown down timber is more than a mere "severe winter storm". This event can only be described as catastrophic in magnitude.

Effectiveness Criteria #6:

As previously communicated, it is submitted that the adequacy or effectiveness of a licensee's management system will to a large extent be reflected in the conclusion reached for criterion 4, rendering Criterion 6 redundant.

The licensee's management systems are the means by which the licensee sets out to achieve a desired result. The efficiency, sophistication or completeness of the systems is only of interest to the Board when objectives are not achieved, and only in the context that a non-compliance with the Act or regulations may have occurred. In our view, the Board should not seek to interfere in any licensee's business unless there has been a corresponding failure to comply with the Act, regulations and standards. To do so risks superimposing the Board's views on local, informed decision makers, risks liability to the Board, and risks expanding the Board's purview beyond the legislative mandate.

The Board's mandate in regards to audits was first set out in the Code and remains unchanged under FRPA:

- To determine compliance with the requirements of Parts 2 to 5 (of the Act) and the regulations and standards made in relation to those Parts by a party, and

- To determine the appropriateness of government enforcement under Part 6 (of the Act).

There is no authority or source for an audit of a licensee's management systems if these do not result in compliance or enforcement issues.

The notion that the licensee's management systems are in themselves an appropriate audit target is unsupported by the Act unless they have resulted in non-compliance.

TFL Forest Ltd

TimberWest has reviewed the draft document and is in agreement with the majority of the report. However, there are two significant concerns with the draft document that we wish to bring to the attention of the board.

The first concerns the finding for block 12-29. This block is the sample referred to in the second bullet in the TimberWest section of Table 6 on page 26 of the draft report. TimberWest objects to this block being designated as non compliant. All blocks audited in the water corridor for all licencees were done from the common position of ocean level. The notation in Table 6 states that this sample was compliant from ocean level but not compliant from the elevation of the upper deck of a cruise ship. Given that this block was the only sample in this audit that was reviewed from both elevations it seems more than reasonable to judge compliance for this block under the same criteria as the other blocks. I would refer you to your stated definition of compliance on page 13 or the draft report. .As discussed at our recent closing meeting, it is clear we do not manage for cruise ship simulations. It is also reasonable to assume that other blocks compliant from ocean level would also be non compliant from a cruse ship simulation.

TimberWest recommends that the Assessment Results reported in Table 5 be changed such that 18 blocks were found to have met the criteria and 2 blocks were found not to have met the criteria. TimberWest would not object to the audit finding that "from a cruise ship simulation" this block was found to be non compliant, i.e. the notation in Table 6 could remain as is.

The second concern is the issue of AAC and managing for visuals. On Table 2 on page 8 and on page 16, the draft report refers to meeting or exceeding the visual objective. As we discussed at the closing meeting, licencees are compelled to singularly meet the visual objective. Not meeting the visual objective is non compliance while exceeding the visual objective (e.g. achieving retention where the objective is partial retention) is potentially subject to a reduction in AAC.

As it is the stated intent of the Board to use this pilot audit to teach the public about managing the visual resource it is very important to state that there is a firm link between meeting visuals and maintaining an AAC. It should not be the intent of this report to give the impression that exceeding the visual requirement is a desirable outcome.

TimberWest would like to thank the Board for the opportunity to provide input into the draft report. This pilot audit provided all parties involved with a tremendous opportunity to learn more about managing the visual resource., an opportunity that was very much appreciated by TimberWest.

Campbell River Forest District

While I generally agree with the Summary of Audit Finding and the Forest Practices Board Commentary, I do have some concerns with the methodology used to assess the level of compliance with visual quality requirements (principle objective 1). It is my opinion that compliance should be assessed on the same basis as the objectives were set. This provides for a fair assessment of current practices. The Campbell River Forest District manages the visual resource values according to established Ministry policies and procedures. This was confirmed by Mr. Jacques Marc, Provincial Visual Landscape Specialist, and copied to Mr. Russ Haas, Auditor. As such, I would appreciate a statement in the summary report to that effect.

I feel that it is entirely appropriate and necessary to audit the effectiveness of managing visual quality (principle objective 2). However, the two principle objectives of the audit are not clearly separated in the Detailed Findings section of the report. This has led to considerable discussion and consternation between my staff, the auditors, other Ministry staff and licensees. The most contentious issue is found under "Effectiveness Criterion 4: Within designated scenic areas, visual management meets or exceeds established VQOs ox RVQCs". Effectiveness Criterion 4 relates directly to principle objective 1, and should be evaluated based on established policies and procedures. It would appear that the auditors were evaluating the criterion based on a different system. This use of a different procedure would be more appropriately dealt with under a section of the Detailed Findings relating to principle objective 2. The discussion regarding different methodologies has been useful and it is our intention to folIow with meetings with. Russ Haas and Jacques Marc to discuss this further.

In light of recommendations from the Central Coast Land and Resource Management Planning process regarding visual resource management, we are particularly interested in reviewing the Boards' methodology for potential application to the CCLRMP area.

I offer the following general comments for the Boards' consideration:

1. I agree with the findings in recommendation 2 and the auditors are aware that we are well advanced toward producing the Highway 19 strategy. Acknowledgement of this would be appreciated.

2. I would also like to see Board Recommendation 2 expanded to read "In cooperation with applicable licensees *and the public,..."*

3. The definition of a polygon under Key Concepts and Terms expanded to state "... an area delineated on a map typically *representing a landform...*"

4. Delete the reference to subjectivity on page 3 to read *"Visual quality is based on human perception and a person's reaction to alterations in the landscape. The visual resource management framework was developed to address this by classifying various levels of forest alteration...*" Rationale: Human perception of alteration is based on human physiology. The eye and the brain react to visual changes and the result is predictable. This is explained in the design manual and is the reason we use visual lines of force when

designing cut blocks. The acceptable level of alteration for a given scene has been determined through extensive sampling of public perception.

5. There should be a reference in the Detailed Findings under principle objective 2 that explains that setting objectives for visual resource management is a two step process. The first step is the inventory process and the second step is the analysis. It is the analysis that determines the final polygon boundaries, and the desired, acceptable, future state of alteration represented by a visual quality objective.

I feel that the audit has been very beneficial to our management of the visual resource in the Campbell River Forest District, and thank you once again for the opportunity to comment.