# The Effectiveness of Managing Visual Resources under the Forest Practices Code

FREP

**Extension Note #13**

August 2010

***Prepared by:***
***Jacques Marc, RFT Visual Resource Officer***

The Forest and Range Evaluation Program (FREP) under the Ministry of Forests and Range provides high quality, science-based information for decision making and continuous improvement of forest practices, policies, and legislation in British Columbia. A key purpose of FREP extension notes is to inform resource management professionals of the results of management practices. This enhances the knowledge base on which professional advice and accountability are based.

*The Effectiveness Evaluation for Visual Quality seeks to answer the general question "How well are we managing and conserving views in designated scenic areas?"*

## MANAGING BRITISH COLUMBIA'S SCENIC LANDSCAPES

British Columbia's world renowned scenic landscapes provide the province's tourism industry with a global competitive edge. While much of B.C.'s spectacular scenery is protected within the provincial park system, most of the highway and water corridors run through the province's system of provincial forests and Tree Farm Licenses. These landscapes are dynamic and subject to change as a result of forestry activities and natural disturbances. Since British Columbia's economy is heavily dependent on both forestry and tourism, it is important to harvest within these areas while maintaining visual quality. Visual Resource Management is the approach used to accomplish this goal. It is about identifying and classifying scenic landscapes and managing forestry activities on the landscape to meet the needs of the public, visitors and other resource users.

Under the Forest Practices Code, visual management involved designating scenic areas and establishing Visual Quality Objectives (VQOs). This means that areas considered visually important to the public and tourism sector were identified on maps, rated, and designated as scenic areas. Once these management zones were established the next step was to prescribe a VQO (level of management) for the landscape. Also under the Forest Practices Code, a VQO was defined as a resource management objective established to reflect the public's desired level of visual quality based on the physical characteristics and social concern for an area. Five levels of management were prescribed: Preservation, Retention, Partial Retention, Modification and Maximum Modification. Preservation allows very little visual impact while Maximum Modification allows for considerable visual impact (Figure 1).

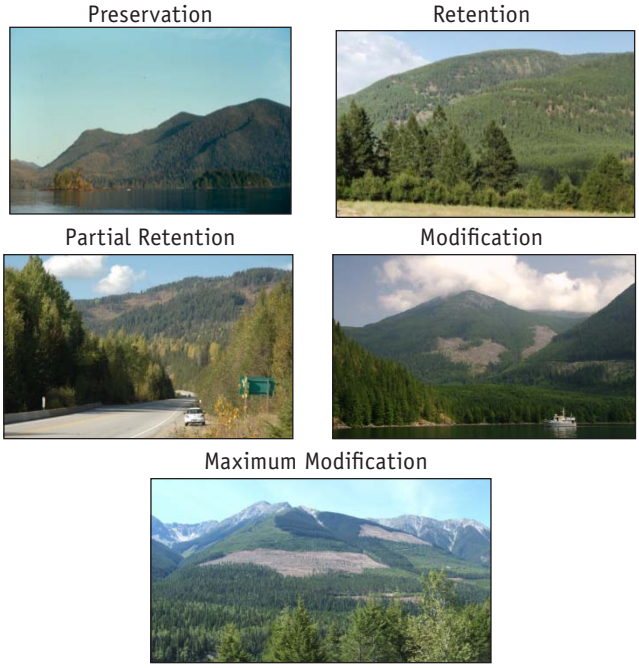



*Figure 1. Examples of the five Visual Quality Objectives*

***The FREP Mission:***
*To be a world leader in resource stewardship monitoring and effectiveness evaluations; providing the science-based information needed for decision-making and continuous improvement of British Columbia's forest and range practices, policies and legislation.*
*http://www.for.gov.bc.ca/hfp/frep/index.htm*

BRITISH COLUMBIA
The Best Place on Earth

In 2004 the Forest and Range Practices Act (FRPA) was introduced. The FRPA model is based on government establishing objectives for the FRPA resource values and licensees preparing results or strategies consistent with the objectives. The goal of the new approach is to reduce the level of government oversight and administration by using professional reliance. Under FRPA, visual resource management still involves designating scenic areas and establishing VQOs.

## EFFECTIVENESS EVALUATIONS

Effectiveness evaluations are about determining if forest and range values are being managed sustainably. To determine this, an effectiveness evaluation has to look at outcomes and trends over time. In the case of visual quality, the goal is to determine if the FRPA model is effective at managing and protecting the visual resource. It is important to first establish how successful the old model was at managing and conserving the visual resource. Also, to make an accurate comparison it is important that a consistent approach be used. Since VQOs were used to manage visual resources under the Forest Practices Code and continue to be the tool used under FRPA it is the logical choice of measurement.

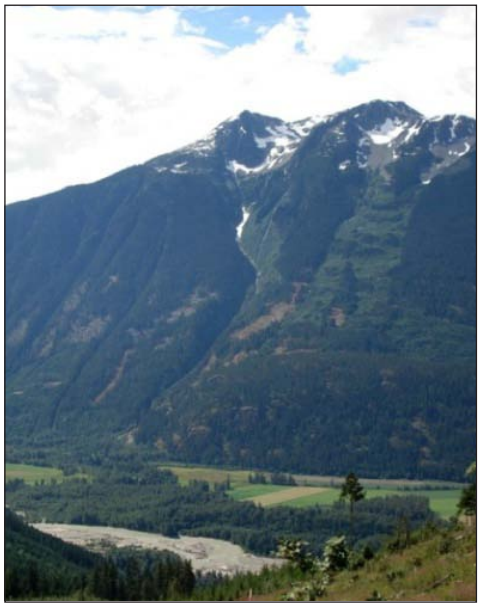


*Photo: Upper Lillooet River showing numerous heli logged openings. Lloyd Davies*

## INDICATORS

Under FRPA, Visual Quality Objectives are defined in the Forest Planning and Practices Regulation (FPPR) using criteria such as size, shape and design of the harvest area. In addition to definitions there are years of research and numerous publications in the policy realm that provide additional guidance on how to evaluate and measure a VQO.

An effectiveness evaluation protocol was developed by a multi-disciplinary team made up of staff from the Ministry of Forests and Range, Forest Practices Board, University of British Columbia and a consulting firm. The initial draft was piloted in the Chilliwack District in 2004 with BC Timber Sales and International Forest Products participation. Participants agreed that the procedures reflected current practice.

The protocol uses an ocular assessment in which the visual condition in the field is compared to the definitions within the FPPR. As the scale of an opening is a strong predictor of visual quality, a numerical assessment is also included in the protocol. The 1996 Clear-cutting and Visual Quality report results show that Retention and Partial Retention VQOs can be accurately predicted using percent landform alteration as a measure (assuming the alteration exhibits good design). The accuracy is 78% for Retention and 85% for Partial Retention.[1]

Once the protocol had been sufficiently tested, an effectiveness evaluation to examine visual practices under the Code was launched in spring 2007.

## TRAINING

To initiate this project, training was provided to staff from 13 districts in 2007 and 2008. Training consisted of one day of lectures and exercises in the classroom, and one day in the field. In total, 40 district staff and two consultants received training.

*Photo: FREP Training in the field. Peter Rennie*

1 BC Ministry of Forests 1996 Clearcutting and Visual Quality: A public Perception Study. Range,Recreation and Forest Practices Branch. http://www.for.gov.bc.ca/hfp/values/visual/Publications/index.htm

## SELECTING SITES

Once staff were trained, the next step was to select the landscapes to be evaluated. 10-20 samples were randomly selected per district. To ensure that the results of this visual evaluation could be compared to those conducted in the future under FRPA, only cut blocks falling within scenic areas with established Visual Quality Objectives or Recommended Visual Quality Classes were sampled. Completed Effectiveness Evaluation checklists were submitted to Forest Practices Branch in 2007 and 2008 for quality assurance prior to being keypunched. Once accepted, the samples were entered into an Excel spreadsheet for analysis.

**Quality Control Measures**

Eligibility checks were:

- block in a Scenic Area.
- landscape mid-ground or near background. (foreground not eligible)
- block administered under the Code or FRPA. (FRPA blocks not eligible)

Once a sample was accepted each checklist was reviewed for accuracy:

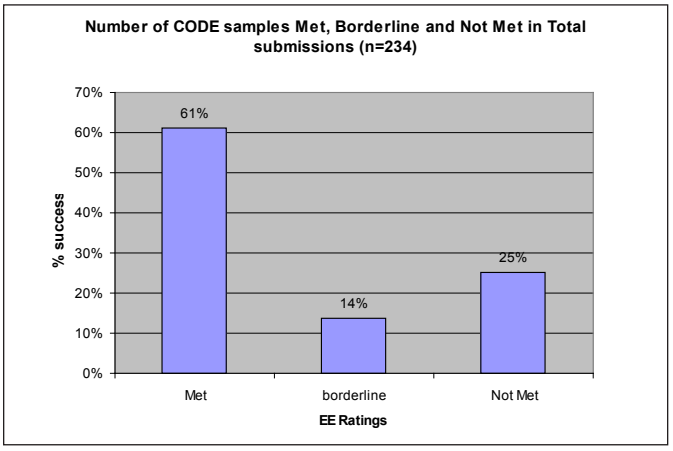
- landform delineation accurate.
- ocular assessment reasonable.
- design observations reasonable.
- percent alteration measured properly.

A total of 259 Code samples were collected from 15 districts. 25 samples were screened out of the analysis population for the following reasons:

- Not in a scenic area
- Foreground view
- Poor photography
- FRPA Block
- Inaccurate ocular or numerical assessment

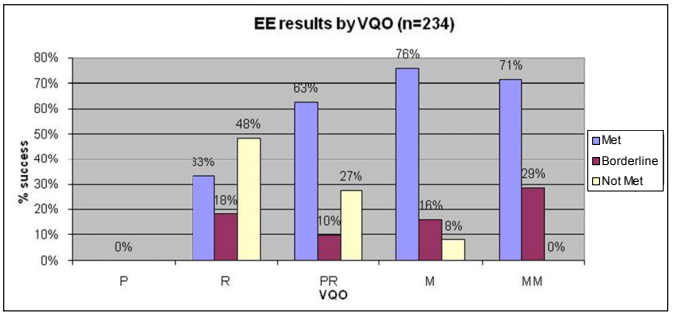
## RESULTS

Basic analysis of the raw data was completed by generating averages and percentages in response to specific questions. The results presented below are for data collected from 234 sites in the 15 participating districts.



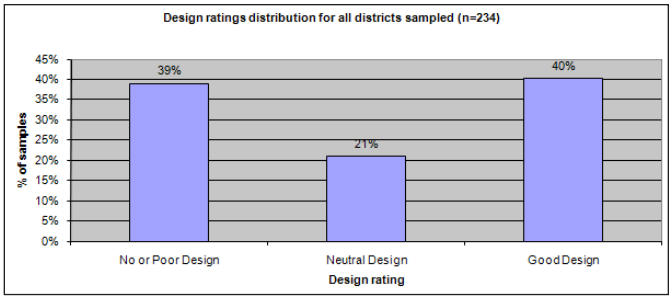

*Question 1: To what extent were VQOs achieved under the Forest Practices Code?*

Provincially VQO's were achieved on average 61% of the time under the Code. The data shows that at a district level the highest level achieved was 78%, while the lowest level achieved was 40%.



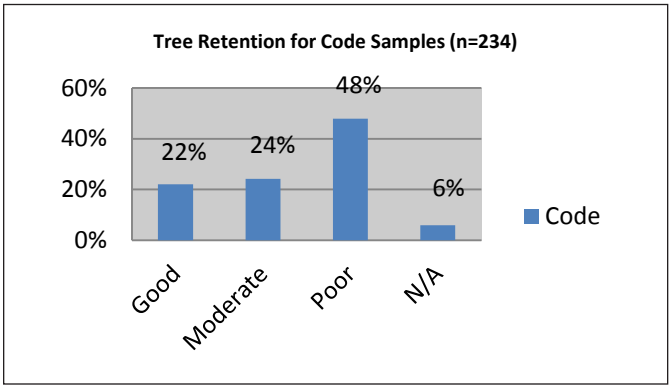

*Question 2: Does VQO achievement vary by VQO category?*

VQOs on highly sensitive landscapes such as Retention were achieved 33% of the time, while VQOs on less sensitive landscapes like Modification were achieved 76% of the time. There were not enough samples within the Preservation VQO class to draw a conclusion.




*Question 3: To what extent are visual design concepts and principles being applied in harvest planning?*

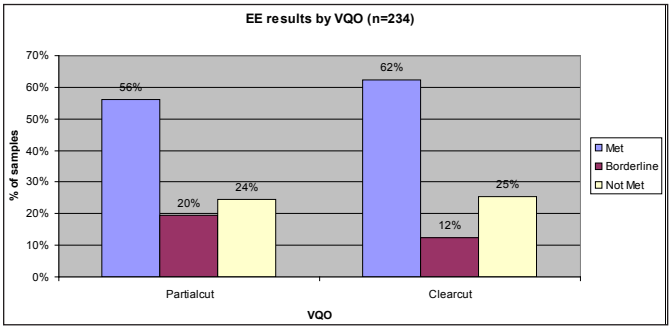
Forest alterations in scenic areas exhibited good visual design 40% of the time.




*(Poor = 15%<, Moderate 15%-22%, Good 22%+)

*Question 4: What levels of tree retention are being implemented within harvest openings to achieve VQOs?*

Visually effective levels of tree retention (i.e. 24% volume or stems and greater),[2,3] were present in 22% of the openings sampled while 48% of the openings sampled contained 15 % or less tree retention. The majority of samples did not contain enough retention to offset the dominance of block size.




*Question 5: How effective are the various silvicultural systems at achieving VQOs?*

VQOs were achieved 56% of the time using partial cutting and 62% of the time using clear cutting.

2 British Columbia Ministry of Forests. 2006 Public Response to Harvest Practices in British Columbia at the Landscape and Stand Level. Forest Practices Branch.

3 Ribe, Rob 2005 Aesthetic Perceptions of Green Tree Retention Harvests in Vista Views. University of Oregon.

## DISCUSSION

Under the Code, VQOs were on average achieved 61% of the time provincially. Amongst districts successes ranged from 40-78%. The most restrictive VQOs (Retention and Partial Retention) appear to be at greatest risk for non achievement. The Retention VQO in particular, which represent a relatively small proportion of scenic areas (13%), was achieved less than half the time. This suggests that there is a need to modify and/or change strategies for managing these sensitive landscapes.

One of the most effective and basic tools available for managing visual quality is the application of visual design principles (Figure 2a, 2b). Visual design concepts were clearly evident in less than half of the samples. As the implementation of visual design is key to achieving VQOs, it will be necessary to focus on ways of encouraging better visual design (e.g. further training opportunities, recommended competencies for engaging in this type of work, and other measures).

*Figure 2a. A poorly designed opening with angular characteristics and horizontal upper boundary.*

*Figure 2b. Well designed openings which blend with the natural landscape features.*

Another tool for managing visual quality is the use of tree retention. Levels of in-block retention (aggregated and dispersed) in evaluation samples was found to be 15% or less in 48% of the openings. Finding ways to leave more in-block tree retention will assist in creating more natural-appearing landscapes and meet the VQOs (Figure 3a, 3b).

*Figure 3a. Ineffective tree retention within block.*

*Figure 3b. Effective tree retention within block.*

The choice of silvicultural system did not appear to improve or decrease the ability to achieve a VQO.

There is one advantage to partial cutting over clearcutting in that more volume can be removed with less visual impact.

## CONSIDERATIONS FOR RESOURCE PROFESSIONALS

Moving forward under FRPA there are a number of opportunities to improve visual management outcomes:

- Visual design is vital
- Better block shaping using visual design concepts and principles, and
- Retention of more in-block stems or volume.

These strategies will also permit slightly larger openings by VQO, which can increase access to timber. The key to ensure that the lessons learned will be applied effectively, is to make more visual design training available to all forest professionals practising in this field. Online visual design training is available on the FPIB website.

## WHAT'S NEXT?

Now that we have taken a retrospective look at visual management under the Code, FREP will now focus on visual management under FRPA. Our goal is to sample 20 landscapes in all 28 districts by 2011. Ultimately, this data will then be analyzed and compared to the Code results and extended to natural resource professionals, to help improve understanding of visual management outcomes and practices; providing an opportunity for continued improvement of decision making and social economic outcomes.

## THANK YOU

Thank you to all District and Regional staff and the consultants who assisted in the development of the protocol, collected the data on which this note is based; and, suggested ongoing improvements

To learn more about the FREP Visual Quality Protocol please refer to FREP website:
*http://www.for.gov.bc.ca/ftp/hfp/external/!publish/frep/indicators/Indicators-VisualQuality-Protocol-Nov2008.pdf*

More information about Visual Resource Management visit:
*http://www.for.gov.bc.ca/hfp/values/visual/index.htm/*

Or contact:

Jacques Marc (Jacques.Marc@gov.bc.ca )
or (250)387-8481

More information about FREP visit:
*http://www.for.gov.bc.ca/hfp/frep/*

Peter Bradford (Peter.Bradford@gov.bc.ca)
or (250) 356-2134

BRITISH COLUMBIA
The Best Place on Earth

FREP
Forest & Range Evaluation Program