



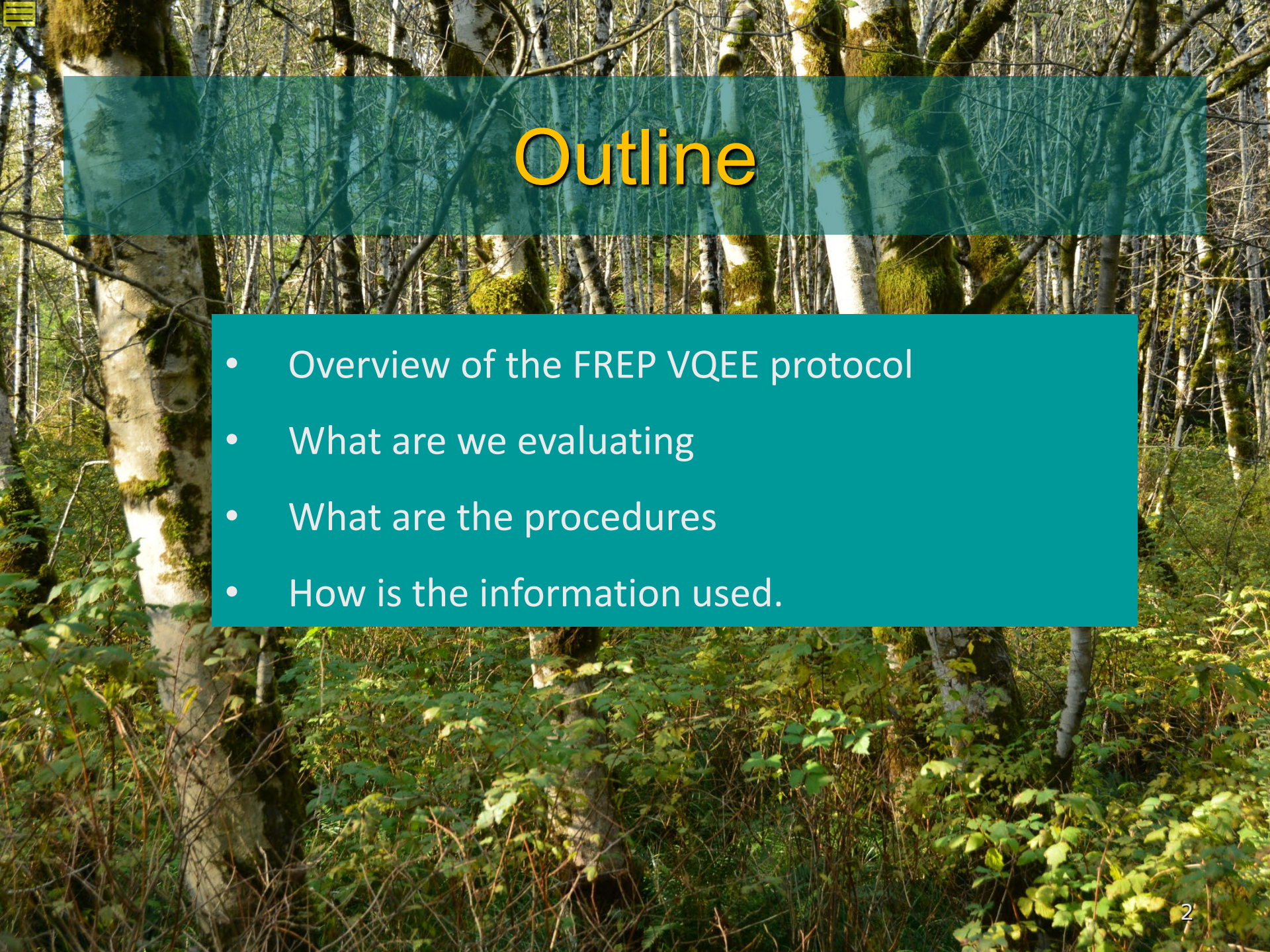
FREP Visual Quality Effectiveness Evaluation 101



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Ministry of Forests, Lands,
Natural Resource Operations
and Rural Development



A background image of a forest with many thin tree trunks and some moss. A semi-transparent teal rectangle is overlaid on the top half of the image.

Outline

- Overview of the FREP VQEE protocol
- What are we evaluating
- What are the procedures
- How is the information used.



Visual Effectiveness Evaluation (VQEE)

What is it?

It is a process and set of criteria used to evaluate the achievement of Visual Quality Objectives (VQO's).

Role:

Its role is to provide information on visual resource status/trends, which in turn identify if forest legislation, policies and practices are working.

Support Practice Improvements

Visual Quality Objectives

- VQOs are management objectives established by the Designated Decision Maker under the Government Actions Regulation Sect 7(2), grandparented from the Code, or set in Higher Level Plans.
- They are used to reflect society's desired level of visual quality on the landscape.



Retention



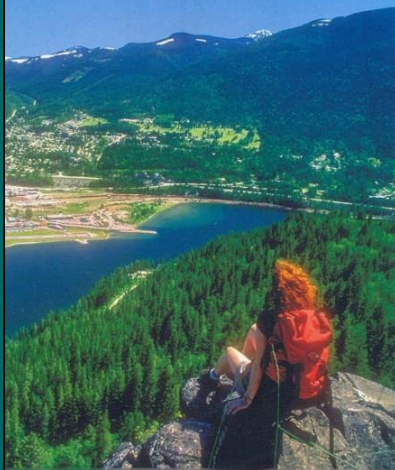
Partial Retention



Modification

Visual Quality Objectives

MANAGING CHANGE ON BRITISH COLUMBIA'S SCENIC LANDSCAPES



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A Guide to Visual Quality Objectives

Categories of Visually Altered Forest Landscapes

VISUAL QUALITY OBJECTIVES	CLEARCUT HARVESTING	RETENTION CUT HARVESTING	PARTIAL CUT HARVESTING
PRESERVATION Attention is very small in scale, and not easily distinguishable from the surrounding landscape. Percent alteration in perspective view: 0% of ground may be visible.	 CLEARCUT HARVESTING 0% ALTERED	 RETENTION CUT HARVESTING 0% ALTERED	 PARTIAL CUT HARVESTING 0% VOLUME/YEARS REMOVED
RETENTION Attention is difficult to see, small in scale, and natural in appearance. Percent alteration in perspective view: 0% to 1.0% of ground may be visible.	 CLEARCUT HARVESTING 1% ALTERED	 RETENTION CUT HARVESTING 0.5% ALTERED	 PARTIAL CUT HARVESTING 0% VOLUME/YEARS REMOVED
PARTIAL RETENTION Attention is easy to see, small to medium in scale, and natural and not residential or agricultural in shape. Percent alteration in perspective view: 1.0% to 2.0% of ground may be visible.	 CLEARCUT HARVESTING 2.5% ALTERED	 RETENTION CUT HARVESTING 1.0% ALTERED	 PARTIAL CUT HARVESTING 0% VOLUME/YEARS REMOVED
MODIFICATION Attention is very easy to see, and is large in scale and natural in appearance, or small to medium in scale but with some unique characteristics. Percent alteration in perspective view: 2.0% to 10% of ground may be visible.	 CLEARCUT HARVESTING 5.0% ALTERED	 RETENTION CUT HARVESTING 2.0% ALTERED	 PARTIAL CUT HARVESTING 10% VOLUME/YEARS REMOVED
MAXIMUM MODIFICATION Attention is very easy to see, and is large in scale, and is residential or agricultural in shape, or built. Percent alteration in perspective view: 10% to 20% of ground may be visible.	 CLEARCUT HARVESTING 10% ALTERED	 RETENTION CUT HARVESTING 5.0% ALTERED	 PARTIAL CUT HARVESTING 20% VOLUME/YEARS REMOVED

THE DEFINITIONS

Visual Quality Objectives
 Visual Quality Objectives are defined in the Forest Planning and Practices Regulation to provide qualitative descriptions of potential visual disturbance.

Achieving Visual Quality Objectives
 The selection of Visual Quality Objectives and the selection of the number of volume/years removed are based on the selection of the Visual Quality Objective.

Selection for Achieving Visual Quality Objectives
 Visual Quality Objectives are defined in the Forest Planning and Practices Regulation to provide qualitative descriptions of potential visual disturbance.

CLEARCUT HARVESTING ALTERATION GUIDE

The alteration percentage is based on the Visual Quality Objective.

Visual Quality Objective	Alteration Percentage
Preservation	0%
Retention	0 - 1.0%
Partial Retention	1.0 - 2.0%
Modification	2.0 - 10.0%
Maximum Modification	10 - 20.0%

ALTERATION GUIDE APPLIED TO AN IDENTIFIABLE LANDFORM

Alteration percentage is based on the Visual Quality Objective.

Percentages alteration numbers that are applied to the Visual Quality Objective are based on the Visual Quality Objective. Alteration is a visual quality objective, not a management objective. Alteration is a visual quality objective, not a management objective. Alteration is a visual quality objective, not a management objective.

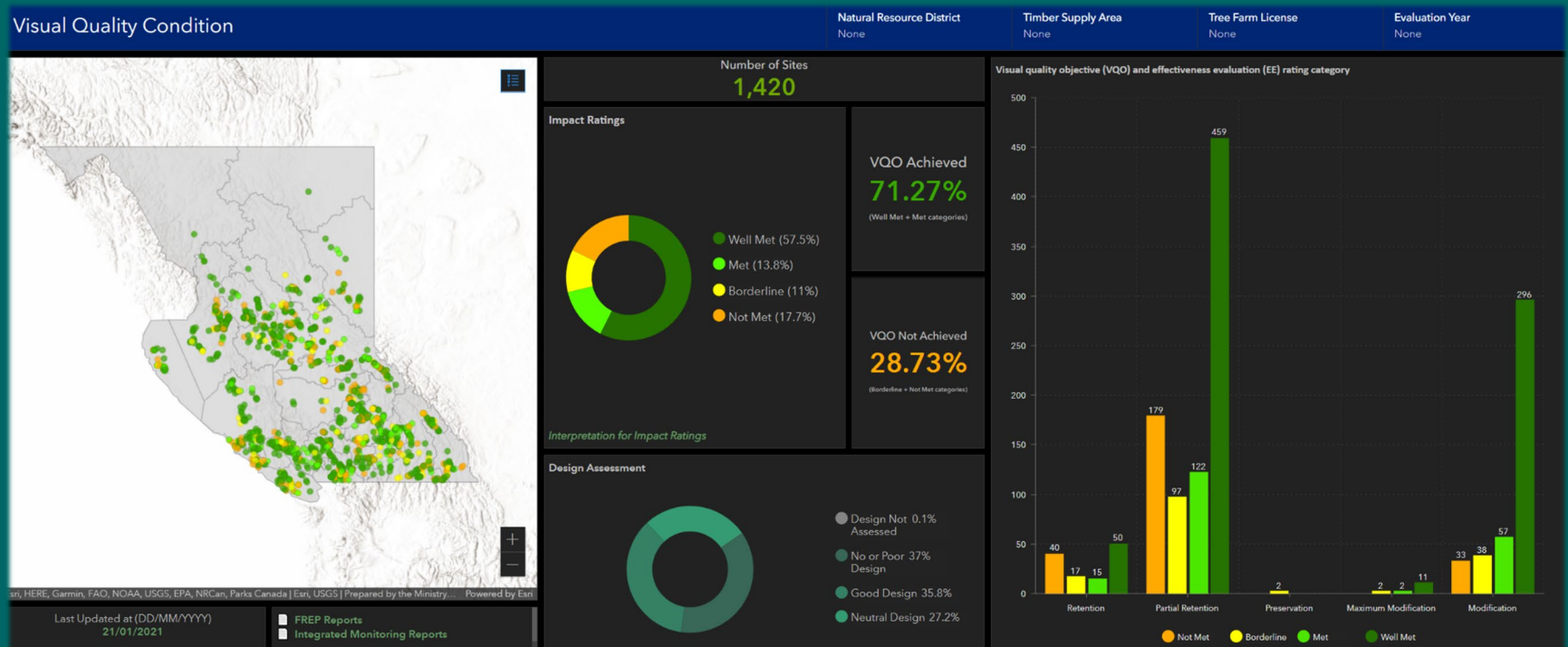


PARTIAL CUT HARVESTING ALTERATION GUIDE

The alteration percentage is based on the Visual Quality Objective.

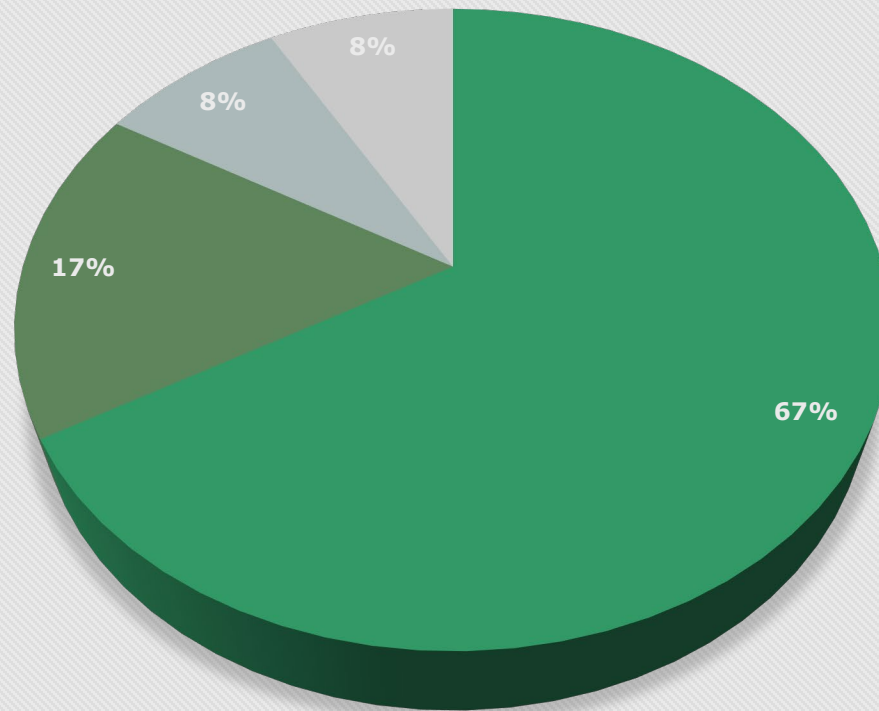
Visual Quality Objective	Alteration Percentage
Preservation	0%
Retention	0 - 1.0%
Partial Retention	1.0 - 2.0%
Modification	2.0 - 10.0%
Maximum Modification	10 - 20.0%

What the VQEE data tells us



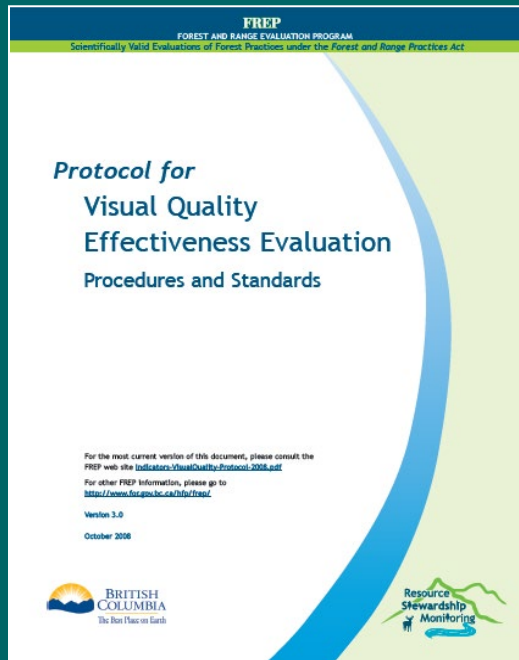
Coast Area VQEE Samples

2021 VQEE Coast Area



Well met Met Borderline Not Met

Visual Effectiveness Evaluation



Procedures & standards document released July 2004 and finalized in 2008.

The procedures & standards were developed to be applied to a single block or multiple blocks visible from significant public viewpoints suitable for Resource Stewardship Monitoring.

2.1.2 Site Information (Office)		
Forest District ...	Sample Code	
Licensee	Date of Field Evaluation	MM/DD/YYYY
License No. CP No.	Block	
General Location	Results Opening ID	
2.1.3 VLI Information (Office)		
Date of Update	VAC ...	Established VQO ...
Polygon No.	VSC ...	Date of Establishment
EVC ...	Recommended VQC ...	Source Document
2.2.1 Viewpoint (Field)		
Viewpoint No.	GPS Lat D/M/S	Viewing Direction
GPS Long D/M/S	Elevation (m)	Viewing Distance
2.2.2 Photography (Field)		
Camera Make	Model	Viewpoint Importance (low) 1 2 3 4 5 (high)
Digital Photo ID Nos	Viewpoint Description	Field of View Width(degrees)
		Field of View Height(degrees)
2.2.3 Assess Basic VQC (Field)		
Alterations meet with Basic VQC definition? Circle where in the range for that VQC. Notes: Ease of Seeing: ...		
Basic VQC P R PR M MM ... Scale: ...		
2.2.4 Design Observations (Field)		
Design Elements	G (-1)	M (0)
Response to visual force lines	☐	☐
Borrows from natural character	☐	☐
Edge treatments incorporated	☐	☐
Distance from the viewpoint	☐	☐
Position on the landform	☐	☐
Total Design		
2.3.2 Assess Initial VQC (Office)		
a) % of landform altered by recent openings		
b) % of landform with site disturbance outside openings		
c) % non veg contribution of old openings		
X = (a+b+c) =	% alteration	Initial VQC
2.3.3 Assess Adjusted VQC (Office)		
d) Impact of roads, side cast, etc. (within openings)		
☐ None ☐ Subordinate ☐ Significant ☐ Dominant	Adj. Factor	
e) Tree retention		
☐ Good ☐ Moderate ☐ Poor	Adj. Factor	
f) Design (enter total from 2.2.4 above)	Adj. Factor	
Total adjustment Y = (d+e+f)	Adj. Total	
Calculate adjusted % alteration	X*(1 + 0.14*Y) =	
Adjusted VQC		
Adjusted % alt		
2.3.4 Partial Cut Alterations		
Partial cutting		
% removed ...		
Average tree height (m) ...		
Clearcut equivalent % alteration as read from Table 4.		
Record this value on line 2.3.2 a.		
2.3.6 Determining EE Rating for the Landform by Comparing Basic VQC with Adjusted VQC (Office)		
1 ☐ Clearly not met (Neither method indicates VQO achievement, both are far from class boundary)		
2 ☐ Not met (Neither method indicates VQO achievement, but both are close to class boundary)		
3 ☐ Borderline (One method indicates VQO achievement, one does not)		
4 ☐ Met (Both methods indicate VQO achievement, but one or both are close to the high end "maximum % alteration limit.")		
5 ☐ Well met (Both methods indicate VQO achievement and are on the lower % alteration limit or mid-range for the class)		
2.3.7 Allowance for Over-ride		
Over-ride EE ...		
Rationale:		
2.3.8 Photo Information		
Lens Focal Length x		
Crop Factor =		
Adjusted Focal Length		
Evaluated by		
Signature		

The Effectiveness Evaluation Form



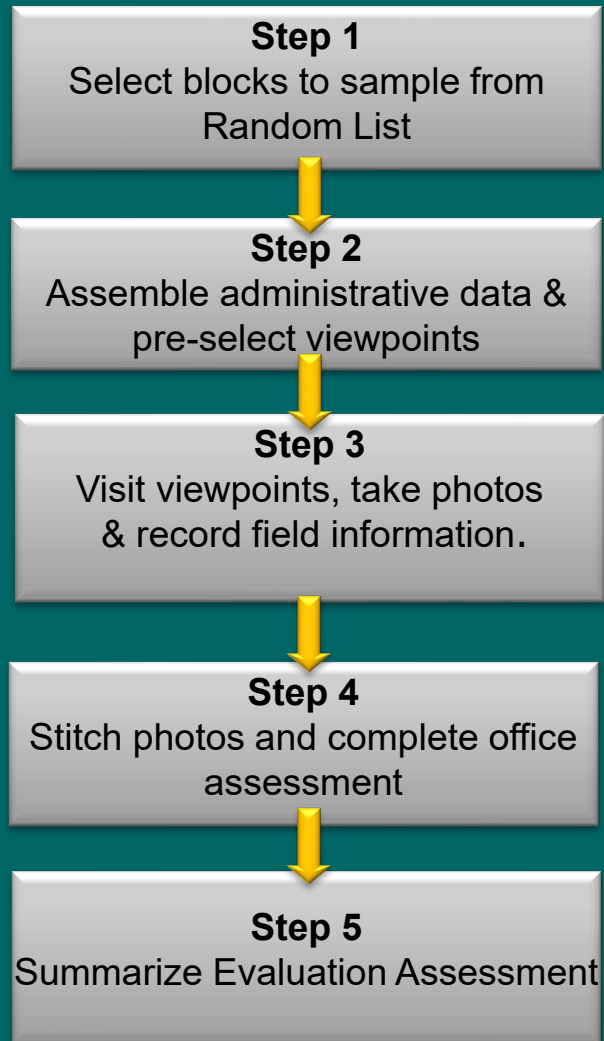
Visual Evaluation Procedures

The FREP visual evaluation approach assesses each view using two independent measures:

1. The definition for each FPPR 1.1 category of alteration (VQO) is evaluated through a field-based assessment and;
2. The perspective percent alteration and design elements are assessed using standards and criteria derived through research.

The two measures are combined to determine a final rating of VQO achievement.

Visual Quality Effectiveness Evaluation



Step ① Select Blocks From Random List

Each spring the Forest and Range Evaluation program generates a list of random openings harvested in the previous 3 years and which occur in VQO polygons.

Previous samples that have been entered into the FREP database are removed from the list.

Note: Random blocks should be chosen in the same order as on the list, if possible.

Note: It is advisable to prepare more openings than your target number, as some openings may not qualify as samples (e.g. not visible, more than one on landform).

VQEE Random List

OPENING_ID	DISTRICT_COD	MGMT_UNIT_DESCRIPTION	DISTURBANCE_START_DATE	REC_EVQO_CODE
1699311	DCC	Williams Lake TSA	2017-10-01	PR
1722608	DCC	Williams Lake TSA	2019-02-11	PR
1726200	DCC	Williams Lake TSA	2018-12-14	PR
1706011	DCC	Williams Lake TSA	2018-07-25	PR
1712188	DCC	Williams Lake TSA	2018-05-15	M
1714859	DCC	Williams Lake TSA	2018-10-19	M
1726209	DCC	Williams Lake TSA	2019-02-28	PR
1729889	DCC	Williams Lake TSA	2019-12-27	PR
1695040	DCC	Williams Lake TSA	2017-01-15	PR
1712197	DCC	Williams Lake TSA	2018-05-15	M
1723967	DCC	Williams Lake TSA	2019-05-01	PR
1712346	DCC	Williams Lake TSA	2018-05-15	M
1727129	DCC	Williams Lake TSA	2018-05-15	M
1726201	DCC	Williams Lake TSA	2019-02-25	PR
1731352	DCC	Williams Lake TSA	2019-09-15	PR



Step 2 Assemble Administrative Data & Pre-Select Viewpoints

1. Identify harvest units to be sampled.
2. Create maps or load device for navigation purposes and to locate the block on the landscape.
3. Complete EE header on the fillable form.
4. Record VLI data and VQO for area.

Significant Public Viewpoint

- This term is used extensively in the Forest Planning and Practices Regulation (FPPR) section 1.1 but is not defined.

“a place or location on the water or land that is accessible to the public and provides a direct viewing opportunity to the alteration and landform being assessed.”

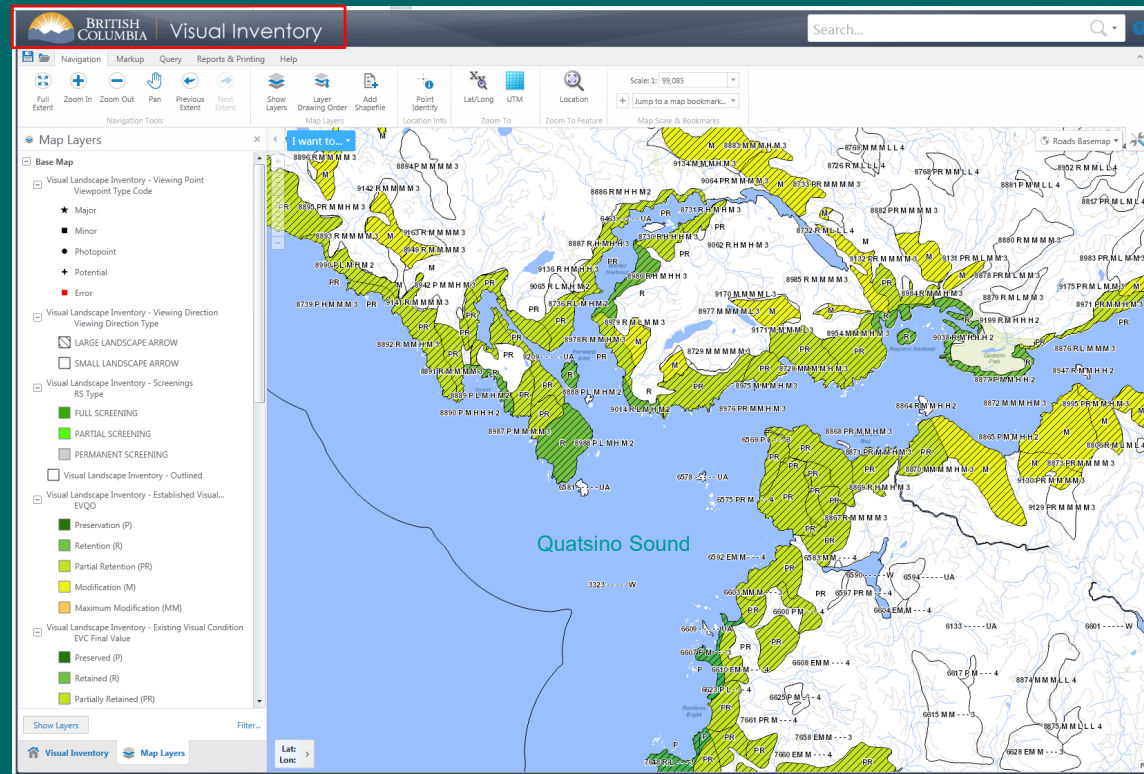


Note: a significant public viewpoint isn't based on viewer numbers.

Where to Find VQO Data

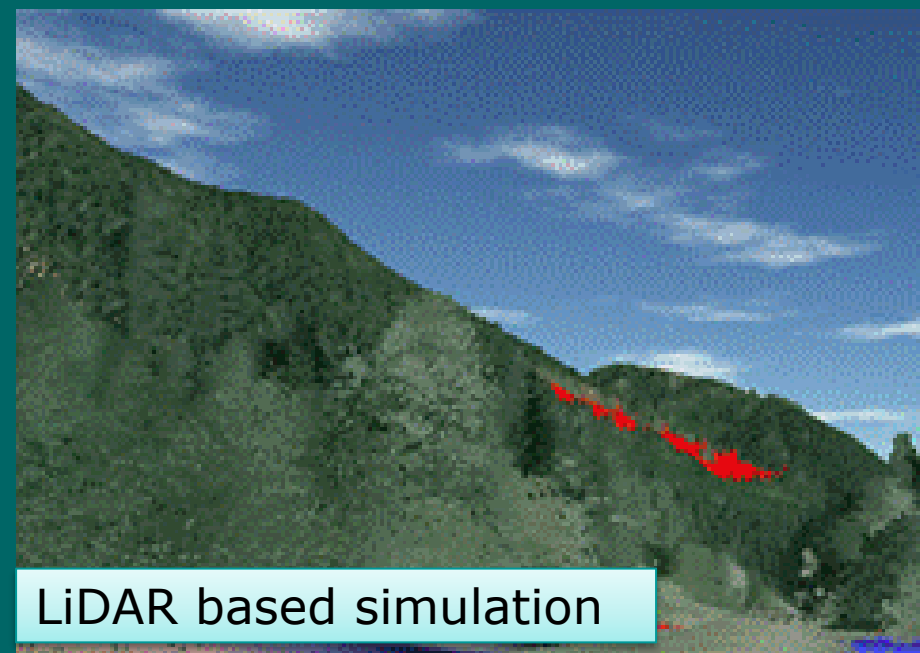
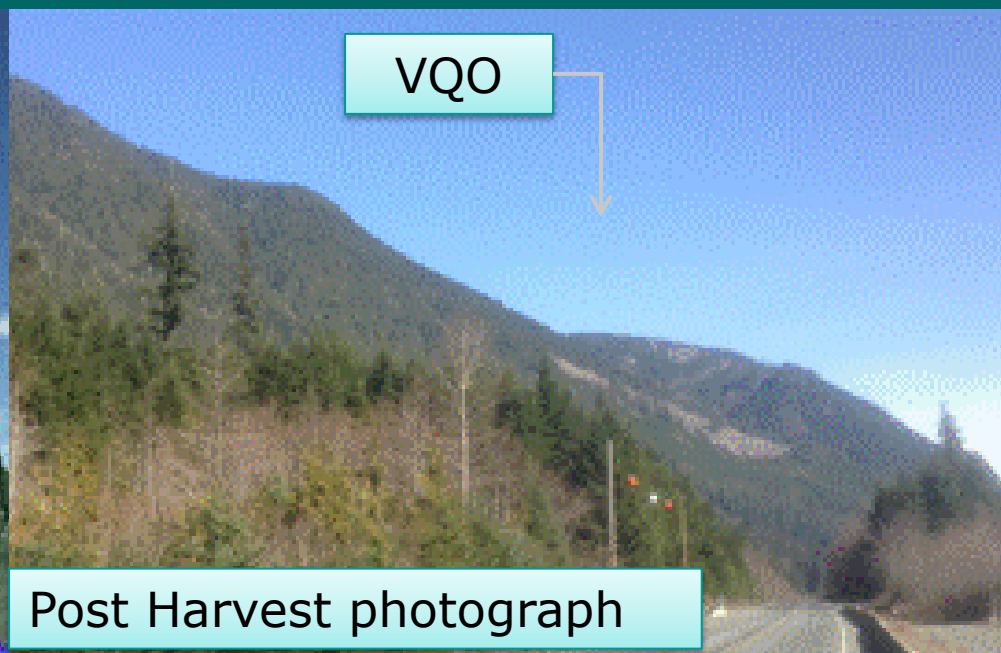
Most established VQO's are available in the BC Geographic Warehouse (BCGW).

Determine the VQO for the area by consulting the MapView Visual Inventory application, or iMap or ArcGIS.



Step 2 Assemble Administrative Data & Pre-Select Viewpoints

- Pre-select possible viewpoints using VLI and completed VIA packages if available.
- Google Earth is a useful tool that helps with this step





Step 3 Visit Viewpoints, Take Photos & Record Field Information

1. Check the validity of the pre-selected viewpoints and add/delete from the selection as needed.
2. At each viewpoint record the GPS coordinates and complete field section of EE form.
3. Photograph the entire subject landform with overlapping photographs where necessary.
4. Mentally delineate the landform against which the alteration will be evaluated.
5. Determine which category of alteration definition has been achieved.
6. Rate the visual design elements present.



Step 4 Complete Office Assessment

1. Stitch the photographs together.
2. Define the landform.
3. Measure the scale of alteration(s) using Adobe Acrobat.
4. Measure the scale of other site disturbances
5. Confirm visual design elements seen in the field

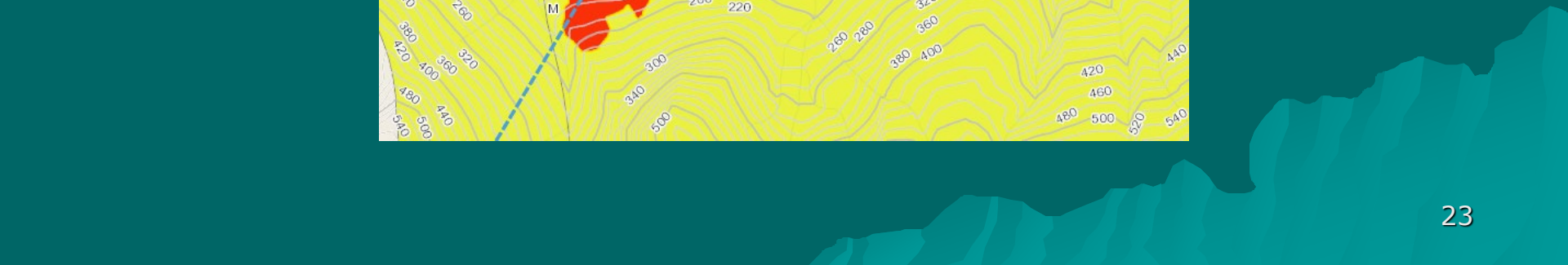
Step 5 Summarize EE Assessment.

1. Rationalize any differences between VQC determined in the field (ocular) and VQC calculated from the photographs.
2. Compare achieved visual condition with VQO.
3. Determine the degree to which the VQO was met or not met.

Finalize and Submit FREP VQEE Packages

1. Completed FREP VQEE Form
2. Image of the sample block from viewpoint
3. Image with lines of force delineated
4. Image with the landform and block delineated and measured
5. Location map showing the viewpoint, view arrow to the sample, and the VSU the sample block is located in, and the block.

FS1252 2008/04



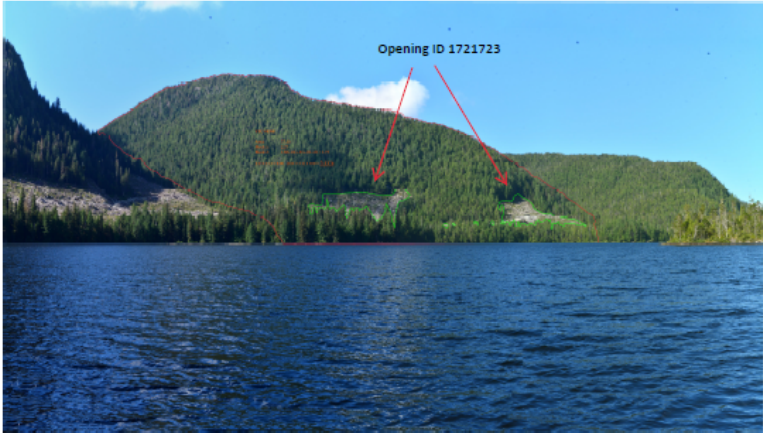
Example of 2021 VQEE sample



Example of 2021 VQEE sample



Example of 2021 VQEE sample

DNI 092 Western Lake Viewpoint #1		% Alteration Calculations																												
<div style="background-color: #f0f0f0; padding: 10px; border: 1px solid #ccc;"> <p>Landform 77.13</p> <p>% Landform Altered by Recent Openings 4.00= 5.19%</p> <p>% Non-Veg Contribution of Old Openings 0.00%</p> <p>% Disturbance Outside Openings 0.00%</p> <p>% Adjusted VQC 7.37%</p> </div>																														
Photo Location: Western Lake, Mathieson Channel Date Taken: August 11, 2021	Viewpoint GPS Coordinates Elev: N 52.662705 W 128.156805 75m Focal Length Used (mm): 52.5mm																													
<div style="display: flex; justify-content: space-between;"> % of Landform Altered by Recent Openings: 5.19% % of Landform with Site Disturbance Outside Openings: 0.00% % Non VEG Contribution of Old Openings: 0.00% </div>																														
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Annex A v. 1.0																														

Helpful Links

FREP Visual Protocol (for detailed procedures):

https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/forestry/visual-resource-mgmt/monitoring-vrm/vrm_protocol_for_visual_quality_effectiveness.pdf

VLI Viewer (for visual inventory data):

<http://maps.gov.bc.ca/ess/hm/visinv/>

Adobe Reader (for % alt):

<https://get.adobe.com/reader/otherversions/>

Autostitch (for panorama stitching):

<http://www.autostitch.net>

Visual Design online training (design elements & principles):

<https://www.for.gov.bc.ca/hfp/training/00018/index.htm>

VQO Poster (for photo examples of achieved VQOs):

https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/forestry/visual-resource-mgmt/vrm_a_guide_to_visual_quality_objectives.pdf

Thank You

Questions: jeremy.webb@gov.bc.ca