RDI Resource Design Inc

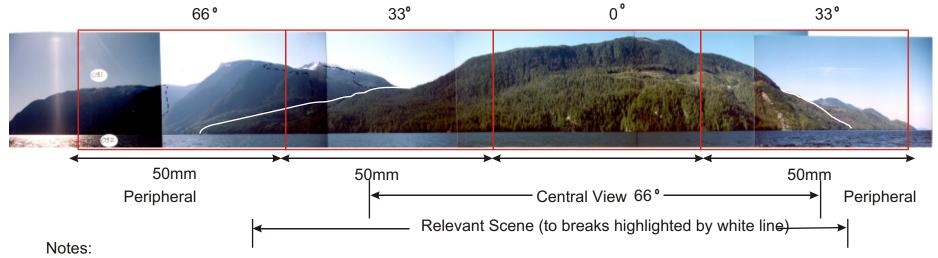# Visual Impact Assessment Training

Conducted by KB Fairhurst in 2000

Present herein for historical reference and potential future application.

66°   33°   0°   33°

50mm   50mm   50mm

Peripheral   Central View 66°   Peripheral

Relevant Scene (to breaks highlighted by white line)

Notes:

Take full width panorama photography to assist orientation and analysis

Full width (180 degrees requires approx. 6- 50mm shots with overlap (50mm = 33 degrees approx.

Large landforms will require vertical camera shots (taller than wider) or wider camera lens.

The number of photos required to capture the relevant scene will depend on viewing distance.

In this example, with VP 1km offshore, the relevant scene required nearly 3 full width shots.
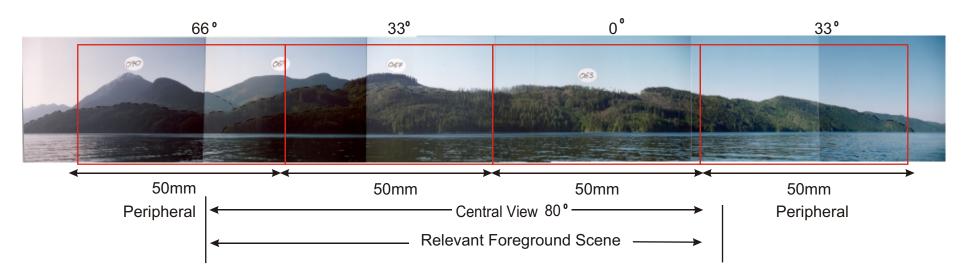
If the viewpoint was 4 km offshore a single 50mm shot would capture the landform.

Human binocular vision (the width of view where both eyes provide stereo vision)

covers approx. 120 degrees without moving the head. Lateral vision extends to 100 degrees approx. left and right.

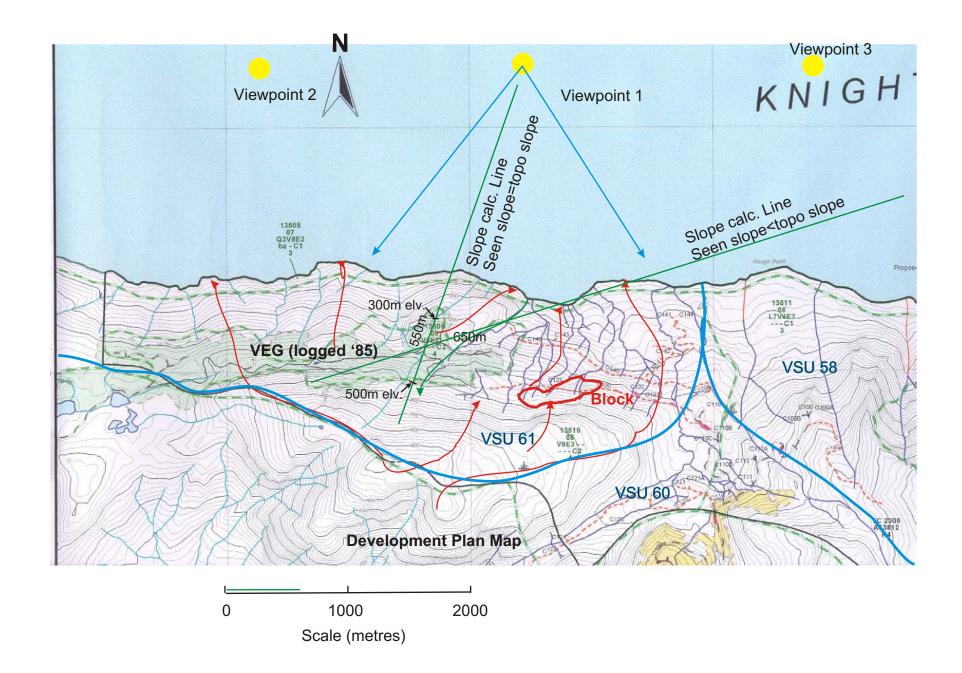A single 50mm camera lens covers approx. 33 degrees.

The relevant scene will vary with landscape character, viewing distance, and viewing condition
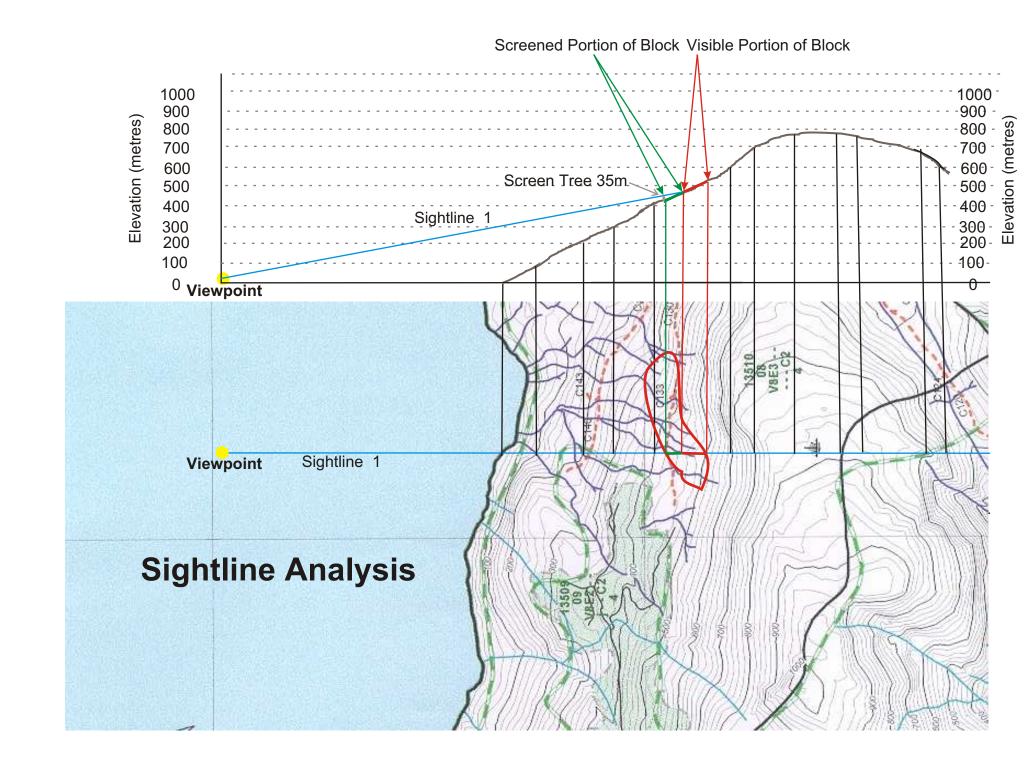

66°   33°   0°   33°

50mm   50mm   50mm   50mm

Peripheral   Central View 80°   Peripheral

Relevant Foreground Scene

Block on Photograph

N

Viewpoint 3

Viewpoint 2

Viewpoint 1

K N I G H T

Slope calc. Line
Seen slope=topo slope

Slope calc. Line
Seen slope<topo slope

13508
07
Q3V8E3
ba - C1
3

Rough Point

Propos

13511
-08
L7V4E3
--- C1
3

300m elv.

550m

650m

VEG (logged '85)

VSU 58

500m elv.

Block

VSU 61

13510
08
V8E3
--- C2

VSU 60

Development Plan Map

0   1000   2000

Scale (metres)

Sightline Analysis

Sketch from Photo

Adjacent VSU steep, with VEG block

Upper zone steep, vertical lines

central area rounded, benches

Lower rolling terrain area

Existing blocK (VEG)

Shorezone steep,
vertical lines, slide track
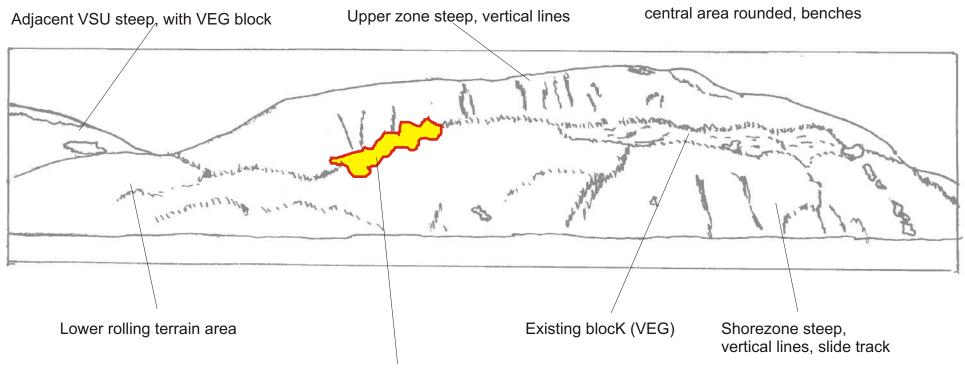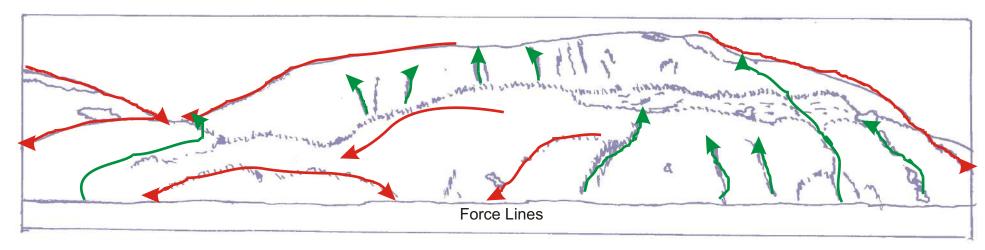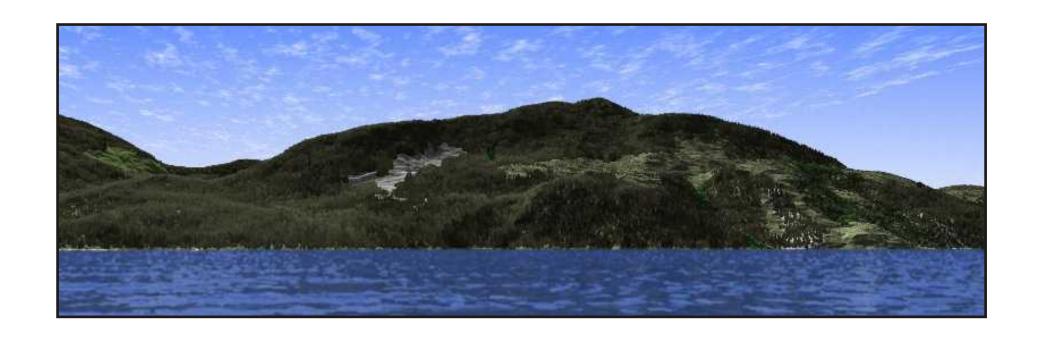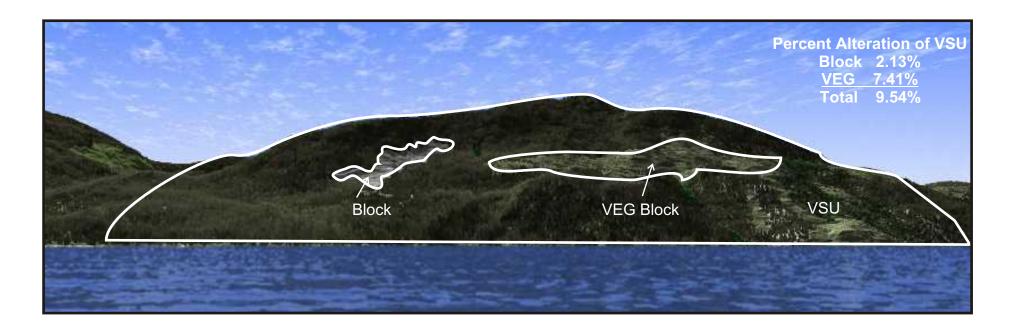
Proposed block is located along transition from rolling to steep terrain, upper edge somewhat irregular meets lines of force

Force Lines

Percent Alteration of VSU
Block   2.13%
VEG   7.41%
Total   9.54%

Block

VEG Block

VSU

Close-up view (telephoto)

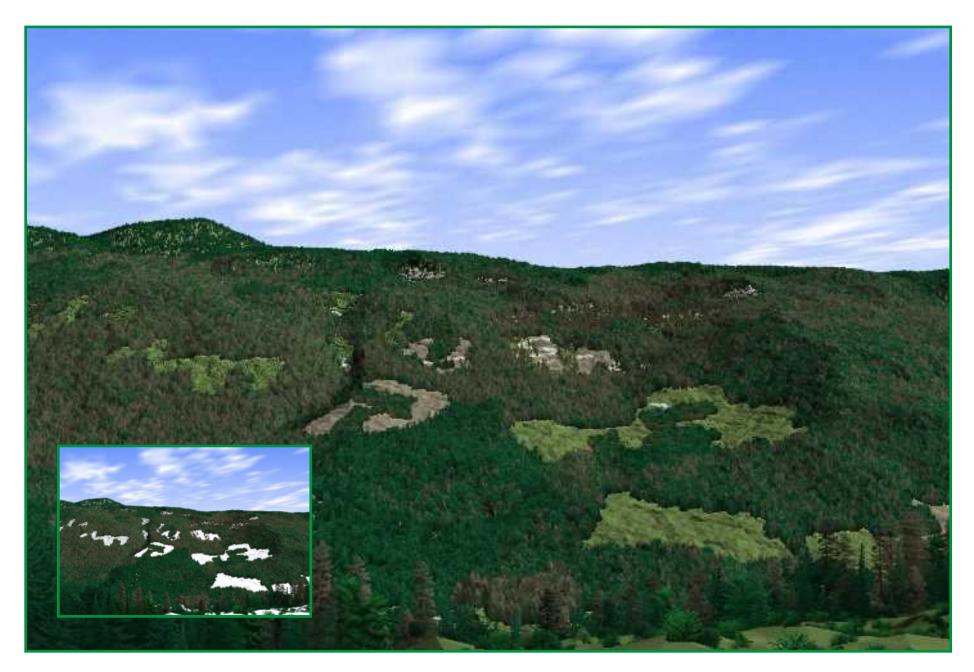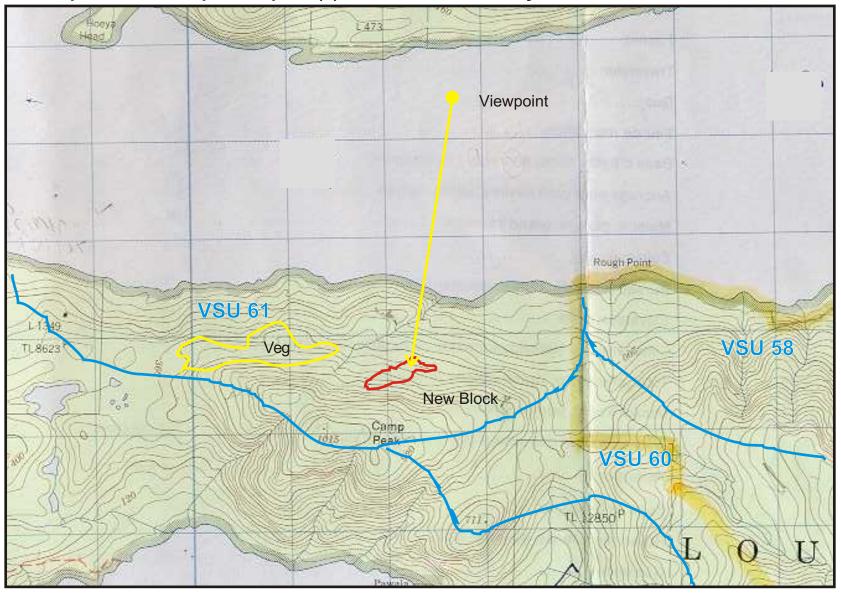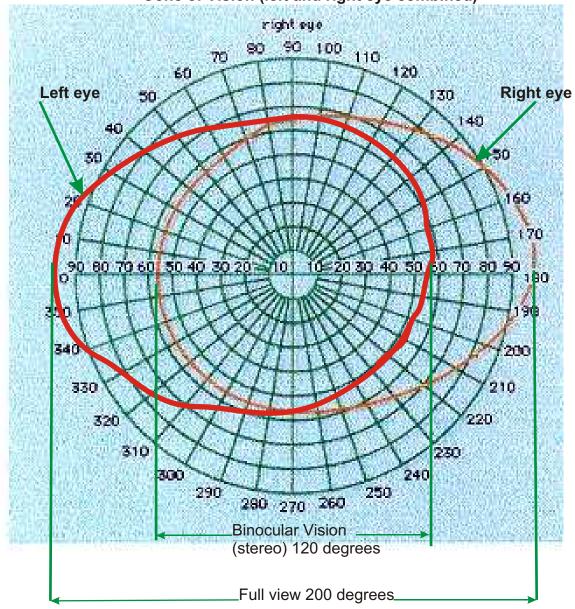Partial Cut Computer Simulation with 10m yarding corridors and 40% retention

Summer and Winter Condition Portrayal

Development Plan Map, Viewpoint(s) and Visual Sensitivity Units

Cone of Vision (left and right eye combined)

right eye

Left eye

Right eye

Binocular Vision
(stereo) 120 degrees

Full view 200 degrees

Source: Encyclopaedia Britannica CD99

Using Table 6:

To determine the probable EVC for a partial cut, determine the volume to be removed (%), the stems to be removed (%), and average height of residual trees (m). For example, consider a partial cut where 30% of the volume is to be removed, 40% of the stems are to be removed, and the average height of residual trees is 20 meters. InTable 6 below you will find that the most probable EVC would be Retention with a probability of 85.2%.

Table 6. *Estimated most probable EVC class for selected combinations of volume removed (%), stems removed (%), and average height of residual trees (m). Probabilities are given as a percentage.*

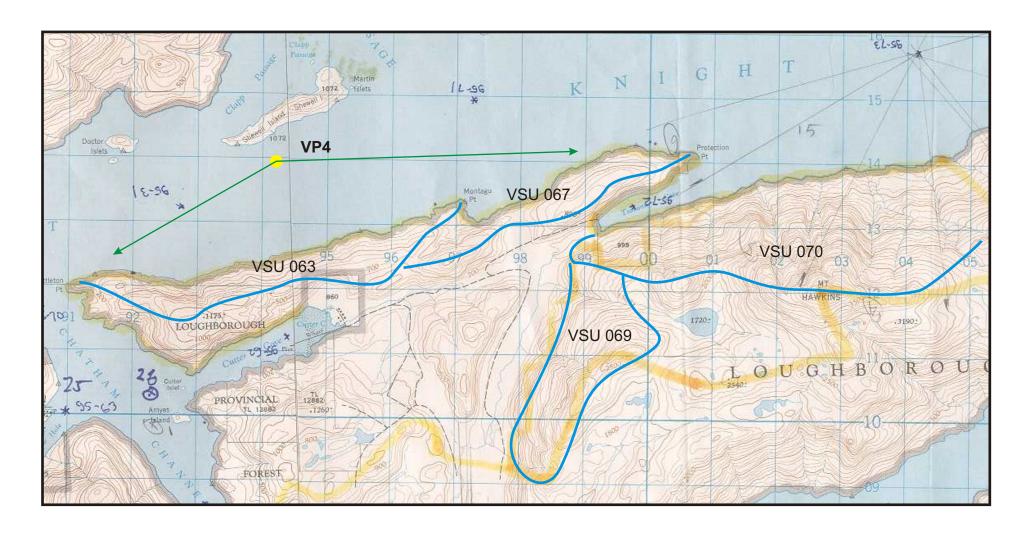| Volume Removed (%) | Stems Removed (%) | Average Height of Residual Trees (m) | | | | | | | | | |
| | | 10 | | 20 | | 30 | | 40 | | 50 | |
		EVC	%	EVC	%	EVC	%	EVC	%	EVC	%
10	10	R	99.2	R	97.8	R	94.1	R	84.8	R	66.2
	20	R	98.9	R	97.0	R	91.8	R	79.7	R	58.0
	30	R	98.5	R	95.7	R	88.8	R	73.5	R	49.3
	40	R	97.8	R	94.1	R	84.8	R	66.1	PR	54.7
	50	R	97.0	R	91.8	R	79.7	R	57.9	PR	60.9
	60	R	95.7	R	88.7	R	73.4	R	49.2	PR	65.6
	70	R	94.1	R	84.7	R	66.1	PR	54.7	PR	68.3
	80	R	91.8	R	79.6	R	57.9	PR	61.0	PR	68.9
	90	R	88.7	R	73.4	R	49.2	PR	65.6	PR	67.3
20	10	R	98.7	R	96.5	R	90.5	R	77.0	R	54.1
	20	R	98.2	R	95.1	R	87.1	R	70.3	PR	50.8
	30	R	97.5	R	93.1	R	82.6	R	62.5	PR	57.7
	40	R	96.5	R	90.5	R	77.0	R	54.0	PR	63.3
	50	R	95.0	R	87.1	R	70.2	PR	50.8	PR	67.1
	60	R	93.1	R	82.6	R	62.4	PR	57.7	PR	68.9
	70	R	90.5	R	77.0	R	53.9	PR	63.3	PR	68.5
	80	R	87.0	R	70.2	PR	50.9	PR	67.1	PR	65.9
	90	R	82.5	R	62.4	PR	57.8	PR	68.9	PR	61.3
30	10	R	97.9	R	94.3	R	85.2	R	66.9	PR	54.0
	20	R	97.1	R	92.0	R	80.2	R	58.7	PR	60.4
	30	R	95.9	R	89.1	R	74.1	R	50.1	PR	65.2
	40	R	94.2	R	85.2	R	66.8	PR	54.1	PR	68.2
	50	R	92.0	R	80.2	R	58.7	PR	60.4	PR	69.0
	60	R	89.0	R	74.0	R	50.0	PR	65.3	PR	67.5
	70	R	85.1	R	66.8	PR	54.1	PR	68.2	PR	64.0
	80	R	80.1	R	58.6	PR	60.5	PR	69.0	PR	58.7
	90	R	74.0	R	49.9	PR	65.3	PR	67.5	PR	52.0
40	10	R	96.6	R	90.8	R	77.6	R	54.8	PR	62.8
	20	R	95.2	R	87.4	R	70.9	PR	50.1	PR	66.8
	30	R	93.3	R	83.1	R	63.2	PR	57.1	PR	68.8
	40	R	90.8	R	77.5	R	54.8	PR	62.8	PR	68.6
	50	R	87.4	R	70.9	PR	50.2	PR	66.9	PR	66.2
	60	R	83.0	R	63.2	PR	57.1	PR	68.8	PR	61.8
	70	R	77.5	R	54.7	PR	62.9	PR	68.6	PR	55.8
	80	R	70.8	P	50.2	PR	66.9	PR	66.2	PR	48.6
	90	R	63.1	P	57.2	PR	68.8	PR	61.8	M	56.6

Continued on following page...

Visual Impacts of Partial Cutting

Table 6 (continued)

Volume Removed (%)	Stems Removed (%)	| Average Height of Residual Trees (m)									
		10		20		30		40		50	
		EVC	%	EVC	%	EVC	%	EVC	%	EVC	%
50	10	R	94.4	R	85.6	R	67.5	PR	53.4	PR	68.0
	20	R	92.3	R	80.7	R	59.5	PR	59.9	PR	69.0
	30	R	89.4	R	74.7	R	50.8	PR	64.9	PR	67.8
	40	R	85.6	R	67.5	PR	53.4	PR	68.0	PR	64.5
	50	R	80.7	R	59.4	PR	59.9	PR	69.0	PR	59.3
	60	R	74.6	R	50.8	PR	64.9	PR	67.8	PR	52.7
	70	R	67.4	PR	53.5	PR	68.0	PR	64.4	M	51.8
	80	R	59.3	PR	60.0	PR	69.0	PR	59.2	M	60.4
	90	R	50.7	PR	64.9	PR	67.7	PR	52.6	M	68.4
60	10	R	91.1	R	78.1	R	55.6	PR	62.4	PR	68.7
	20	R	87.8	R	71.6	PR	49.5	PR	66.6	PR	66.5
	30	R	83.5	R	63.9	PR	56.5	PR	68.7	PR	62.3
	40	R	78.1	R	55.5	PR	62.4	PR	68.7	PR	56.4
	50	R	71.5	PR	49.5	PR	66.6	PR	66.5	PR	49.3
	60	R	63.9	PR	56.6	PR	68.7	PR	62.3	M	55.7
	70	R	55.5	PR	62.4	PR	68.7	PR	56.4	M	64.1
	80	PR	49.6	PR	66.6	PR	66.5	PR	49.3	M	71.7
	90	PR	56.6	PR	68.7	PR	62.2	M	55.8	M	78.3
70	10	R	86.0	R	68.2	PR	52.8	PR	67.8	PR	64.9
	20	R	81.2	R	60.2	PR	59.4	PR	69.0	PR	59.8
	30	R	75.2	R	51.6	PR	64.5	PR	68.0	PR	53.3
	40	R	68.2	PR	52.8	PR	67.8	PR	64.8	M	51.0
	50	R	60.1	PR	59.4	PR	69.0	PR	59.8	M	59.6
	60	R	51.5	PR	64.6	PR	68.0	PR	53.3	M	67.7
	70	PR	52.9	PR	67.8	PR	64.8	M	51.0	M	74.8
	80	PR	59.4	PR	69.0	PR	59.8	M	59.7	M	80.8
	90	PR	64.6	PR	67.9	PR	53.2	M	67.7	M	85.7
80	10	R	78.6	R	56.4	PR	61.9	PR	68.8	PR	57.0
	20	R	72.2	PR	48.8	PR	66.3	PR	66.8	PR	50.0
	30	R	64.6	PR	55.9	PR	68.6	PR	62.8	M	54.9
	40	R	56.3	PR	61.9	PR	68.8	PR	57.0	M	63.3
	50	PR	48.8	PR	66.3	PR	66.8	PR	50.0	M	71.0
	60	PR	56.0	PR	68.6	PR	62.7	M	55.0	M	77.7
	70	PR	62.0	PR	68.8	PR	57.0	M	63.4	M	83.2
	80	PR	66.3	PR	66.8	PR	49.9	M	71.1	M	87.5
	90	PR	68.6	PR	62.7	M	55.0	M	77.7	M	90.9
90	10	R	68.9	PR	52.1	PR	67.6	PR	65.2	M	50.1
	20	R	60.9	PR	58.8	PR	69.0	PR	60.3	M	58.8
	30	R	52.4	PR	64.1	PR	68.1	PR	53.9	M	66.9
	40	PR	52.2	PR	67.6	PR	65.2	M	50.2	M	74.2
	50	PR	58.9	PR	69.0	PR	60.3	M	58.9	M	80.3
	60	PR	64.2	PR	68.1	PR	53.9	M	67.0	M	85.3
	70	PR	67.6	PR	65.2	M	50.3	M	74.2	M	89.1
	80	PR	69.0	PR	60.3	M	58.9	M	80.3	M	92.1
	90	PR	68.1	PR	53.8	M	67.0	M	85.3	M	94.3

VLI Map

7.0 Glossary

Clearcut: a silvicultural system that removes the entire stand of trees in a single harvesting operation from an area that is one hectare or greater and at least two tree lengths in width.

Existing visual condition (EVC): a component of the visual sensitivity inventory that presents the level of human-made landscape alterations caused by resource development activities and expressed in terms of the visual quality objective categories. *(see definitions under Visual Quality Objective)*

Human-caused alteration: any type of disturbance to a landscape caused by human activity.

Partial cut: a general term referring to silvicultural systems other than clearcutting, in which only selected trees are harvested. Partial cutting systems include seed tree, shelterwood, selection, and clearcutting with reserves.

Percent alteration: the scale of human alteration to the landscape, including cutblocks, expressed as a percentage of a landscape unit or the total scene.

Scenic area: any visually sensitive area or scenic landscape identified through a visual landscape inventory or planning process carried out or approved by the district manager.

Viewshed: a physiographic area composed of land, water, biotic, and cultural elements which may be viewed and mapped from one or more viewpoints and which has inherent scenic qualities and/or aesthetic values as determined by those who view it.

Visual Absorption Capability (VAC): a component of the visual sensitivity inventory that rates the relative capacity of a landscape to absorb land-use alterations and still maintain its visual integrity.

Visual impact assessment: an evaluation of the visual impact of resource development proposals on forest landscape.

Visual landscape analysis: the process of recommending visual quality objectives based on the visual sensitivity inventory and social factors.

Visual landscape inventory: the identification, classification, and recording of the location and quality of visual resources and values.

Visual landscape management: the identification, assessment, design, and manipulation of the visual features or values of a landscape, and the consideration of these values in the integrated management of provincial forest and range lands.

Visual quality: the character, condition, and quality of a scenic landscape or other visual resource and how it is perceived, preferred, or otherwise valued by the public.

Visual Quality Objective (VQO): a resource management objective established by the district manager 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.

The specific VQO classes are defined as follows:

> **Preservation:** No visible alterations.
> **Retention:** Human-caused alterations are visible but not evident.
> **Partial retention:** Human-caused alterations are evident but subordinate and not dominant.
> **Modification:** Human-caused alterations are dominant but have natural appearing characteristics.
> **Maximum Modification:** Human-caused alterations are dominant and out of scale.

Visual Quality Rating (VQR): a measure of the public's "enjoyment of the scenery," for use in this study

Visual resource: the quality of the environment as perceived through the visual sense only.

Visual Sensitivity Class: a component of the visual sensitivity inventory that rates the sensitivity of the landscape based on biophysical characteristics and viewing and viewer related factors.

Design Discussion