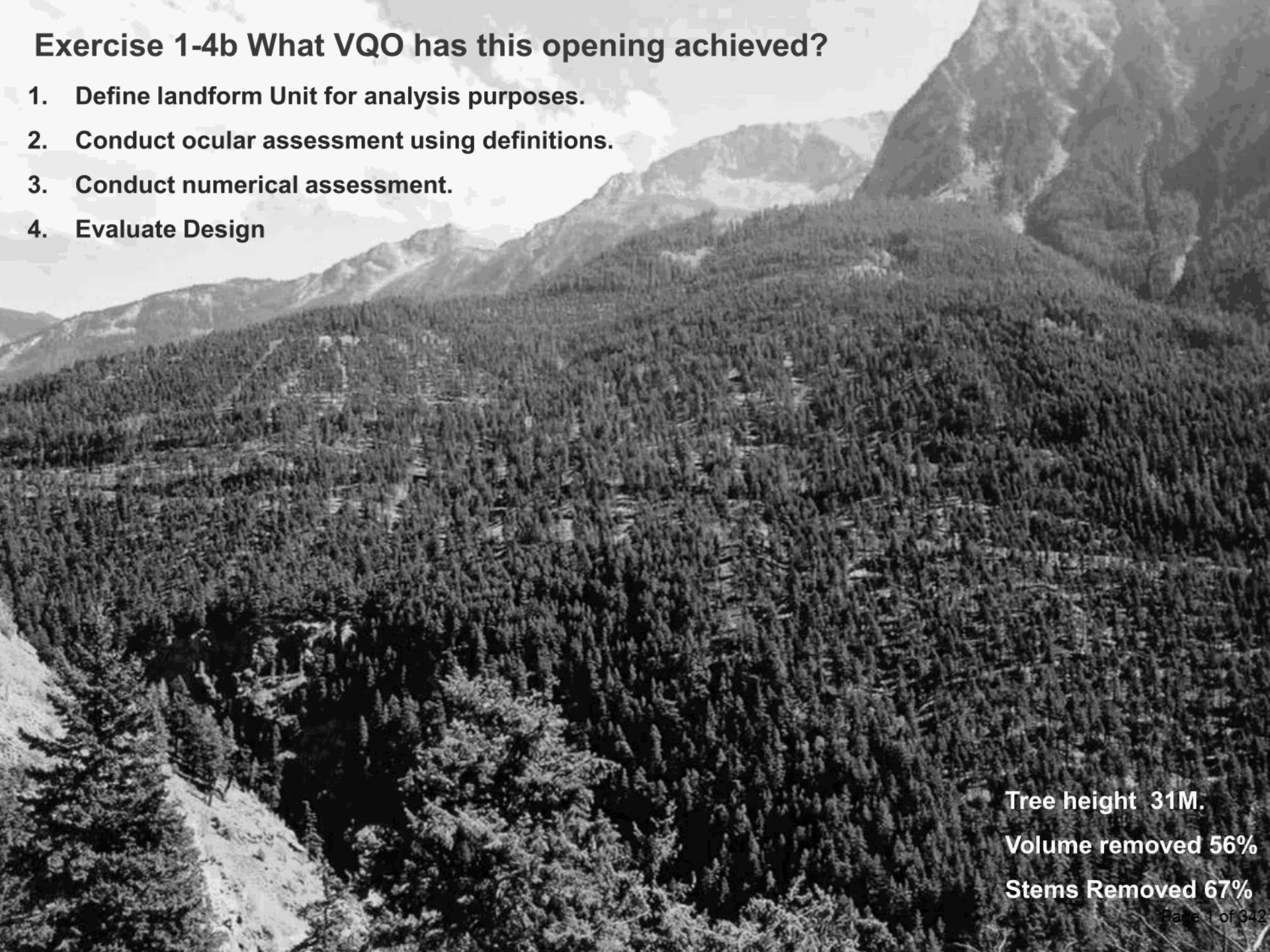
Exercise 1-4b What VQO has this opening achieved?

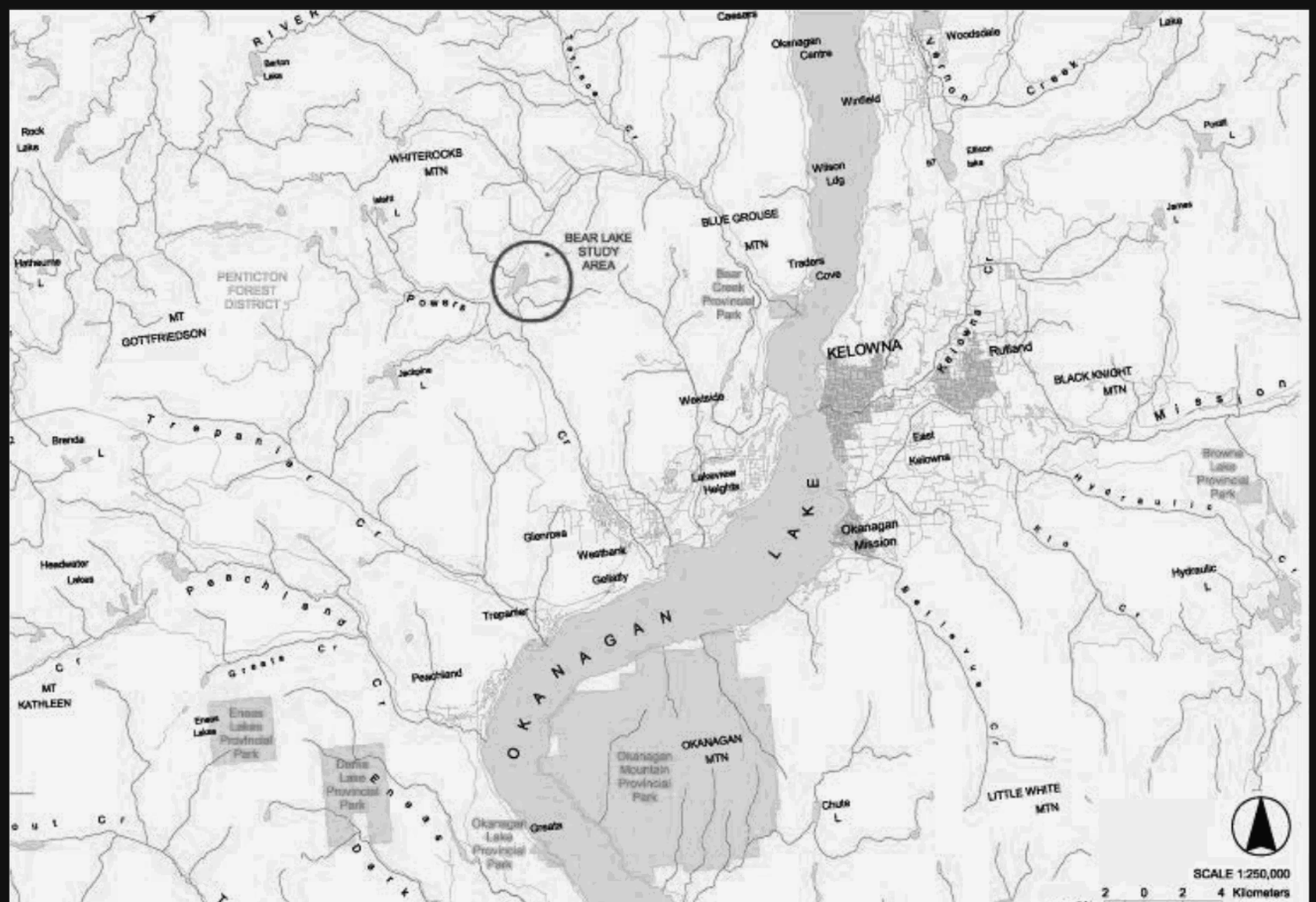
1. Define landform Unit for analysis purposes.
2. Conduct ocular assessment using definitions.
3. Conduct numerical assessment.
4. Evaluate Design



Bear Lake Integrated Visual Design Plan

Ministry of
Forests, Lands and
Natural Resource Operations

Bear Lake Location Map



Bear lake Integrated Visual Design Plan

1. Visual Design Unit Boundaries Established
2. Management Objectives Identified
3. Resource Inventory Information Assembled
4. Resource Analyses Conducted
   - Visual Force Analysis
   - Land Feature Analysis
   - Operability Assessment
5. Concept Design Developed
6. Detailed Design (Complete pattern of shapes).
7. Design Tested Through Visual Simulations
8. Final Design & Documentation Produced

BRITISH COLUMBIA

Bear Lake Recreation Site

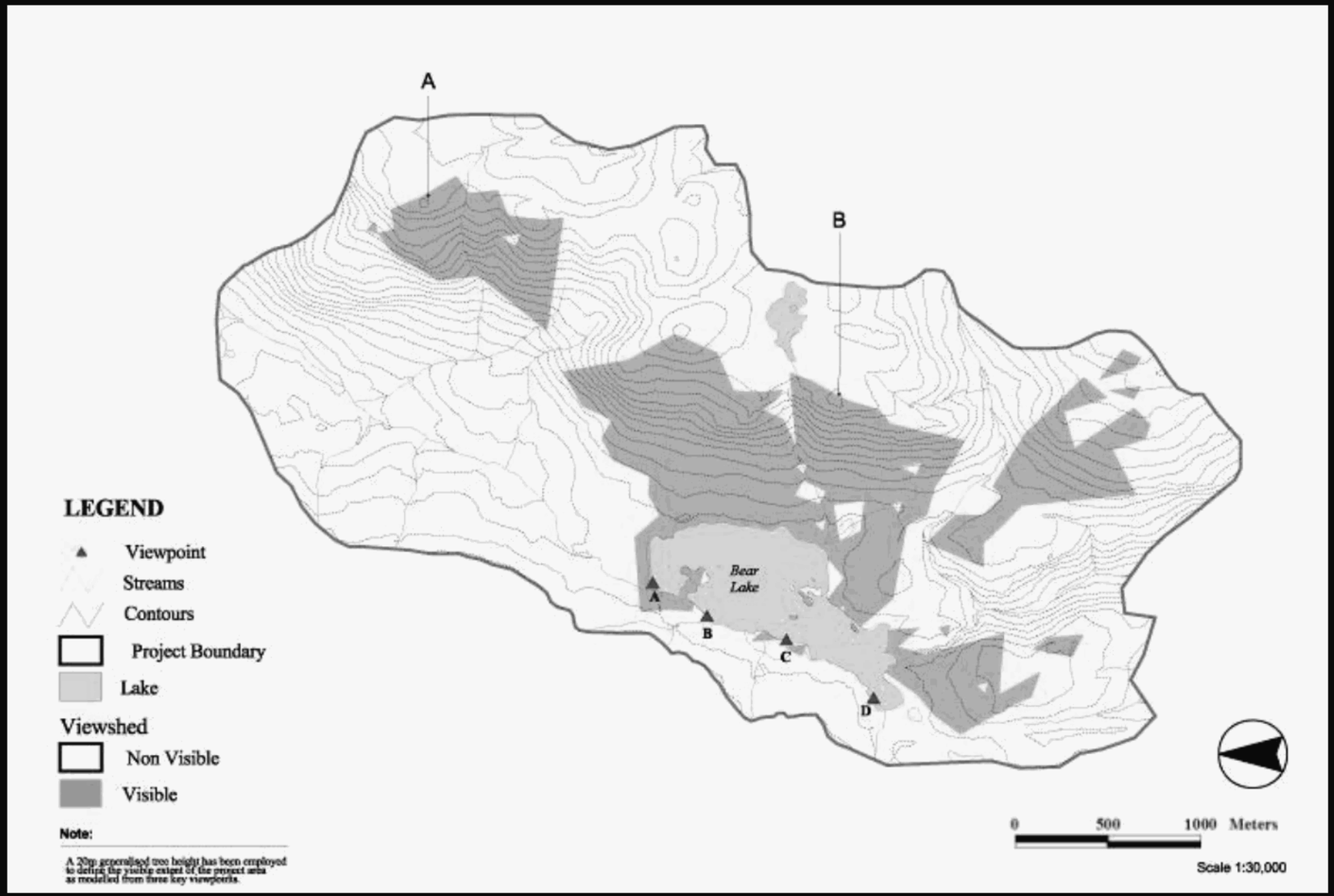
BRITISH COLUMBIA

Page 006

Withheld pursuant to/removed as

Copyright

Viewpoint Locations & Extent of Visible Area

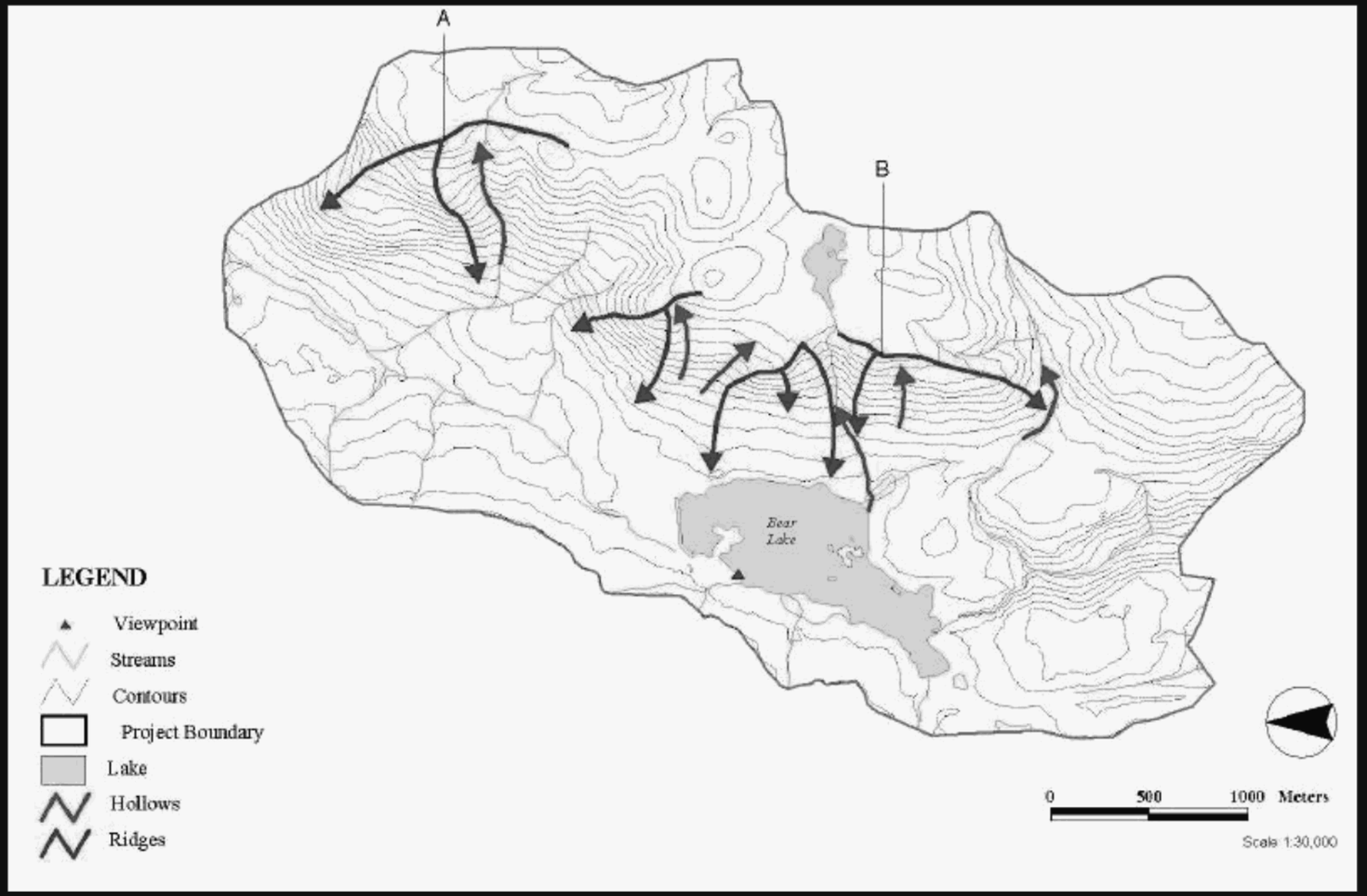


BRITISH COLUMBIA

Viewscape as seen from Viewpoint B

Lines of Force - Perspective View from Vpt. B

Lines of Force - Plan View



Landscape Character Analysis – Perspective View

Pattern of openings provides density in colour and texture and enhances VAC of visible face

Moderately rolling landform characterised by steep upper slopes and a gently sloping ”apron" at the lake edge

Southern half of project area is more visibly diverse than north with a higher VAC

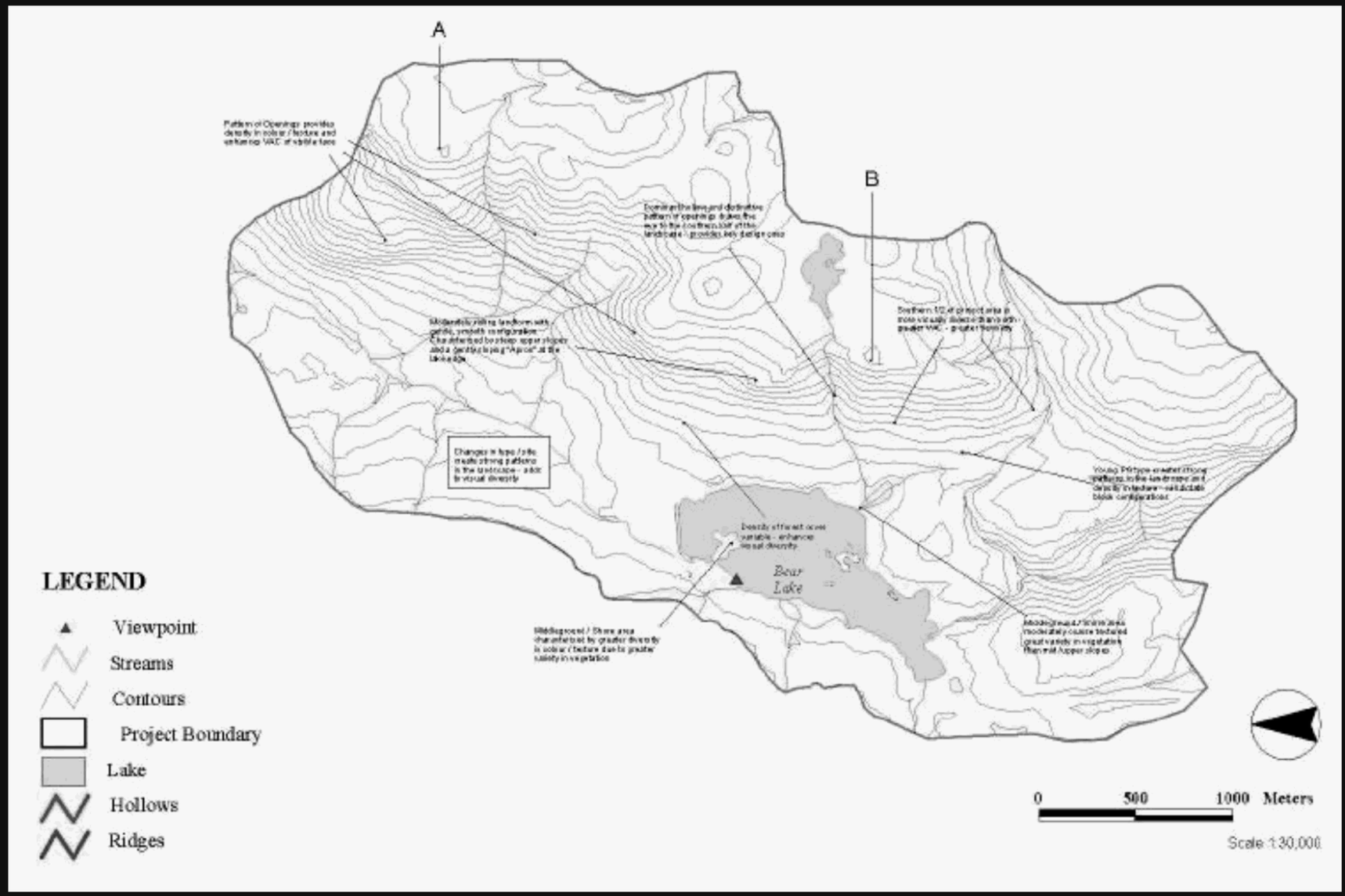
Changes in forest type create strong patterns in the landscape. Adds to overall diversity

Mid ground shore area characterised by greater diversity in colour and texture due to greater diversity in vegetation

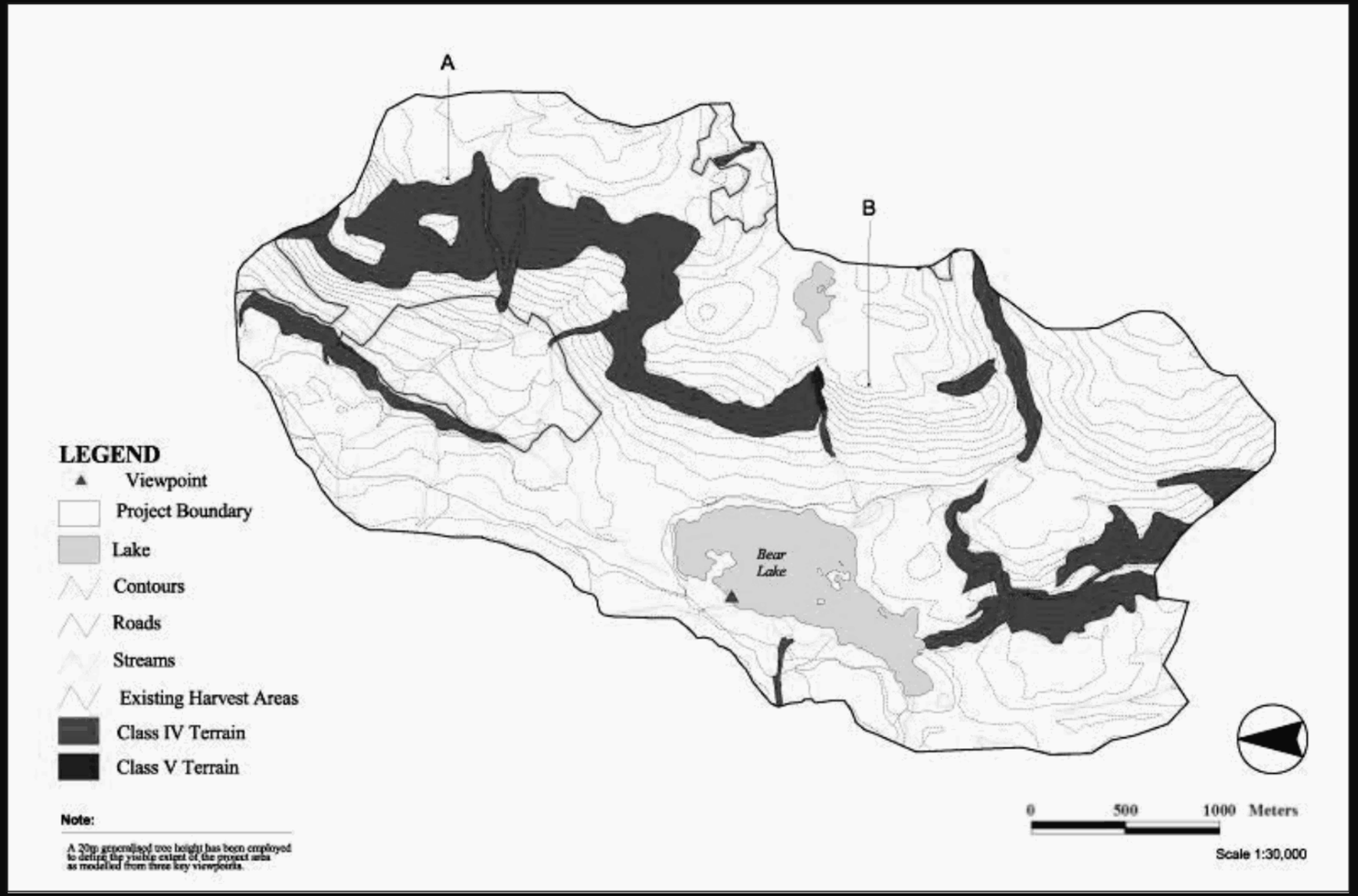
Young Pine type creates strong patterns in the landscape and diversity in texture - will dictate block configurations

BRITISH COLUMBIA

Landscape Character Analysis - Plan View

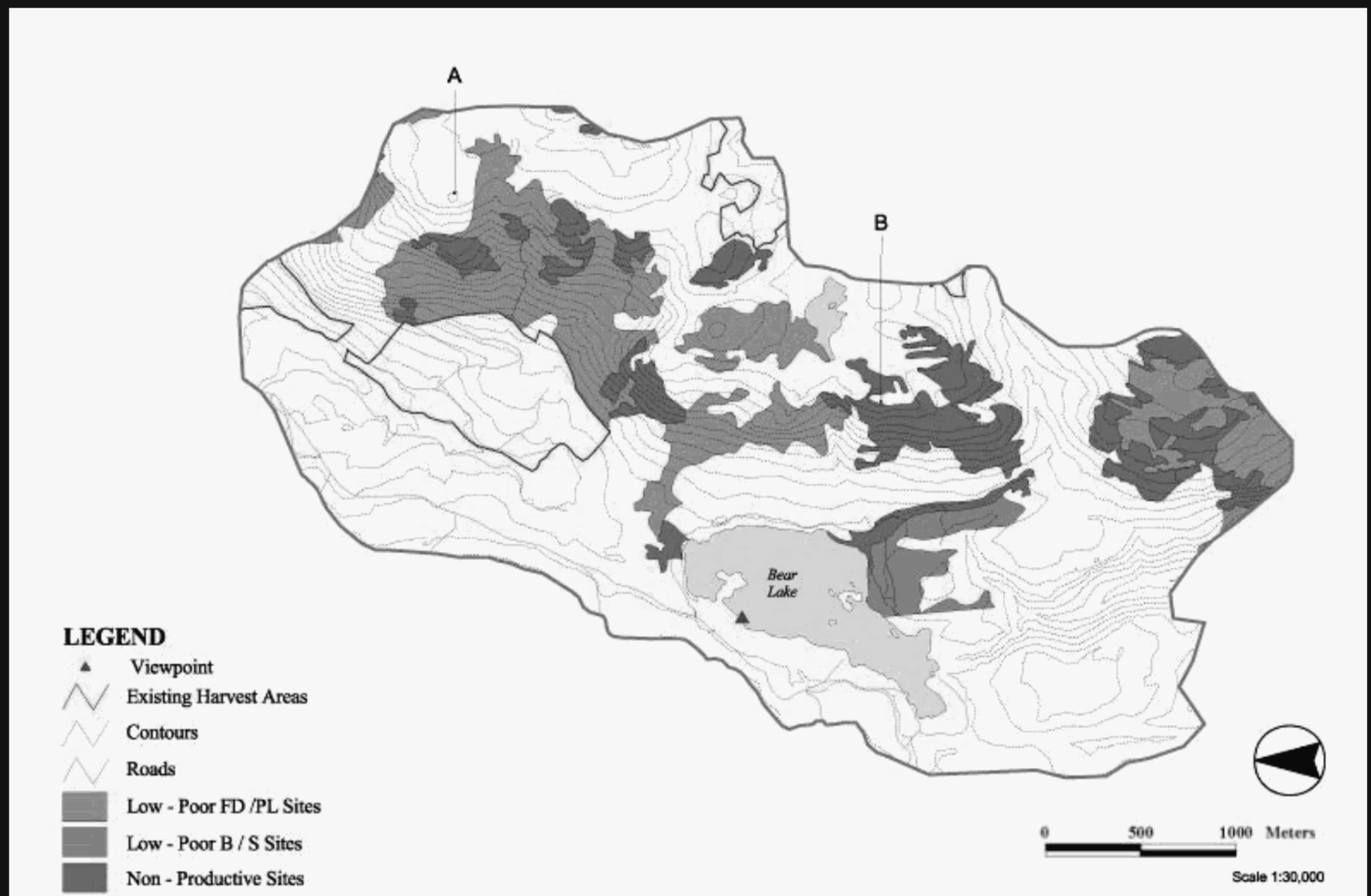


Terrain Hazard Mapping

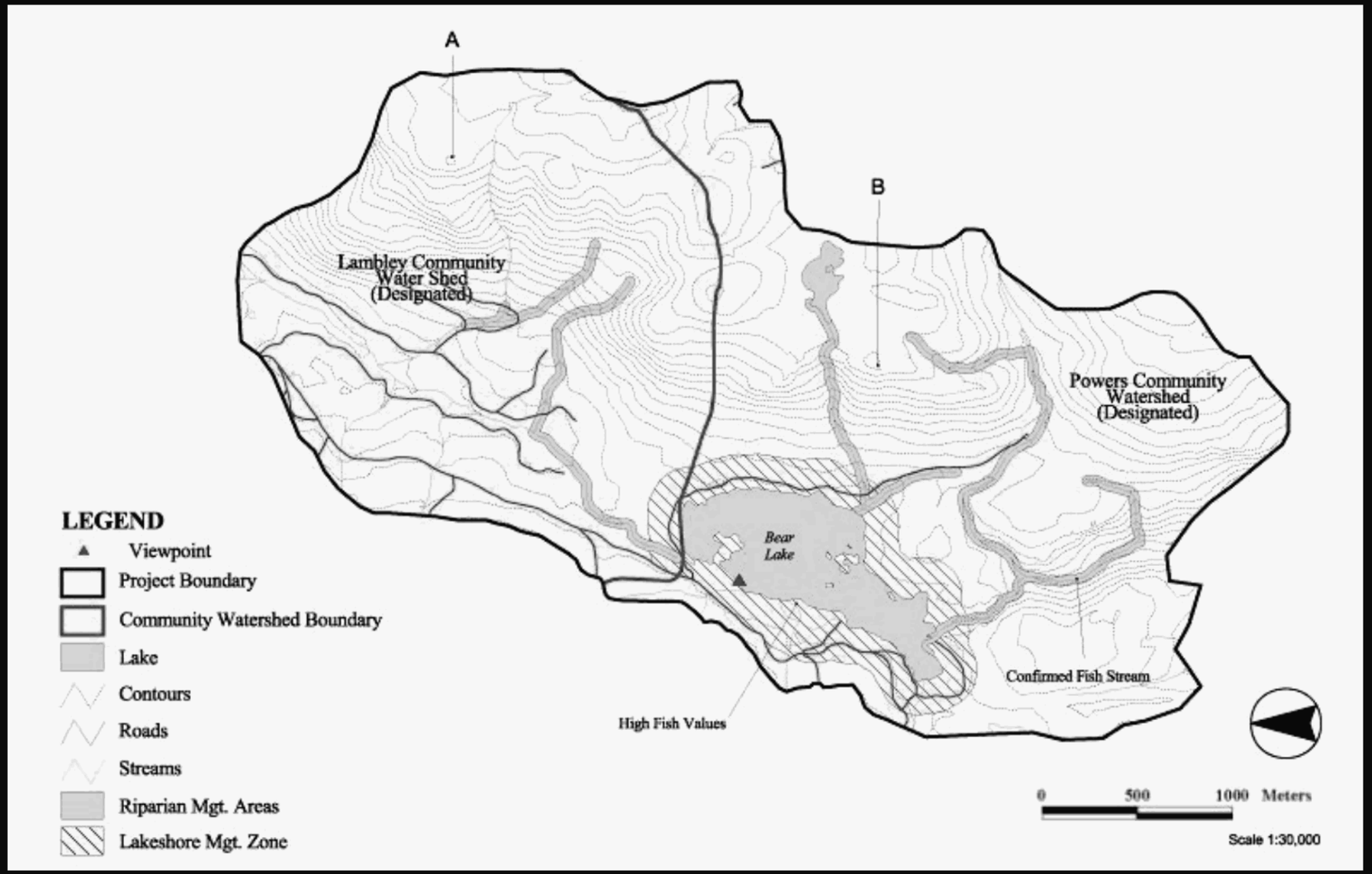


BRITISH COLUMBIA

Inoperable Stands

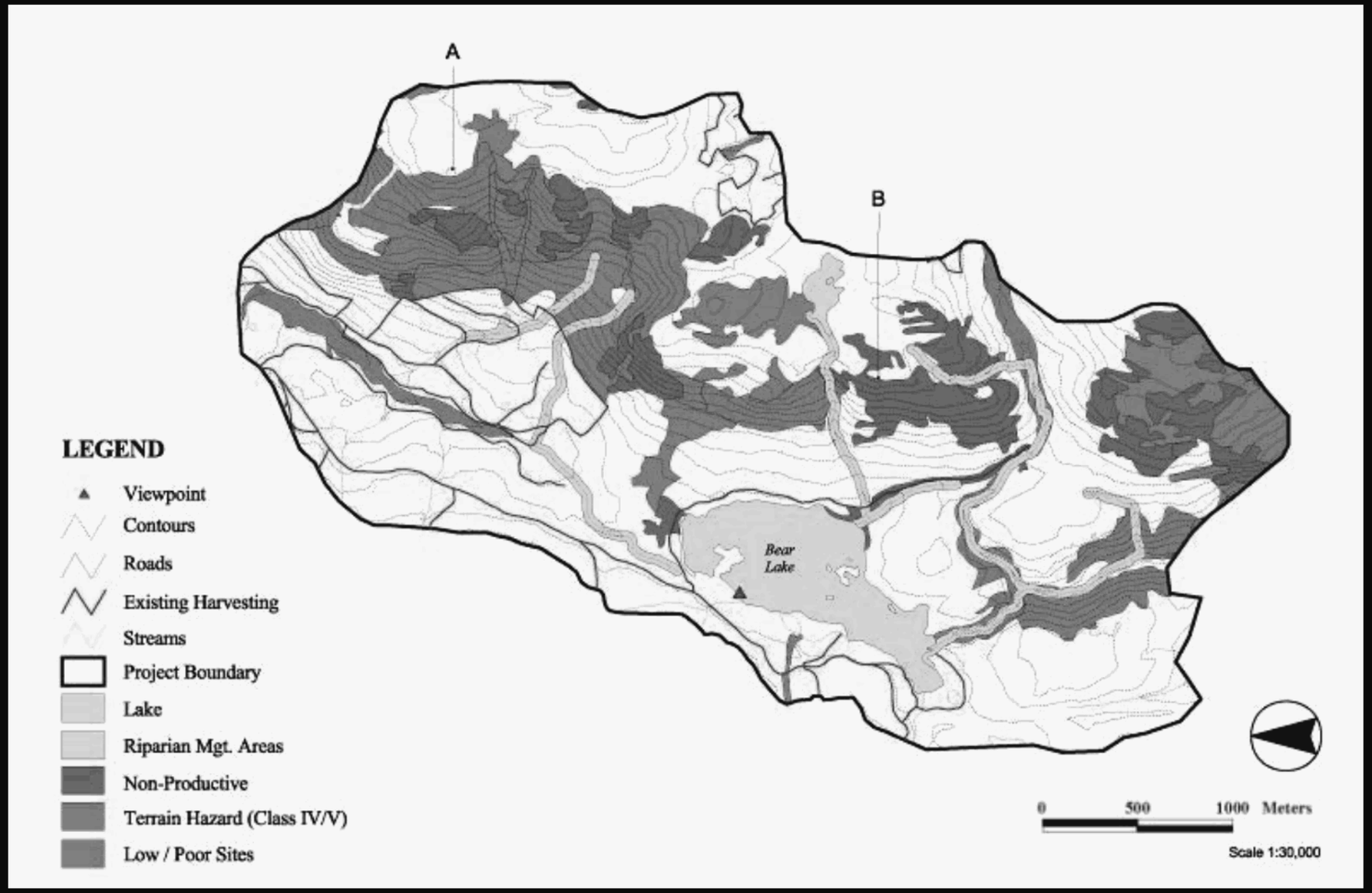


Riparian Areas & Wetlands

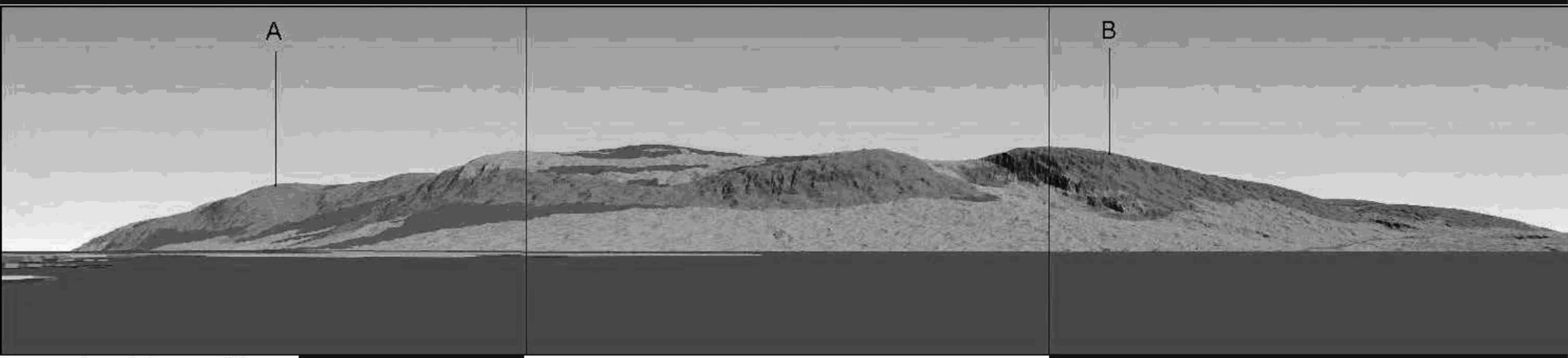


BRITISH COLUMBIA

Composite Constraints – Plan View

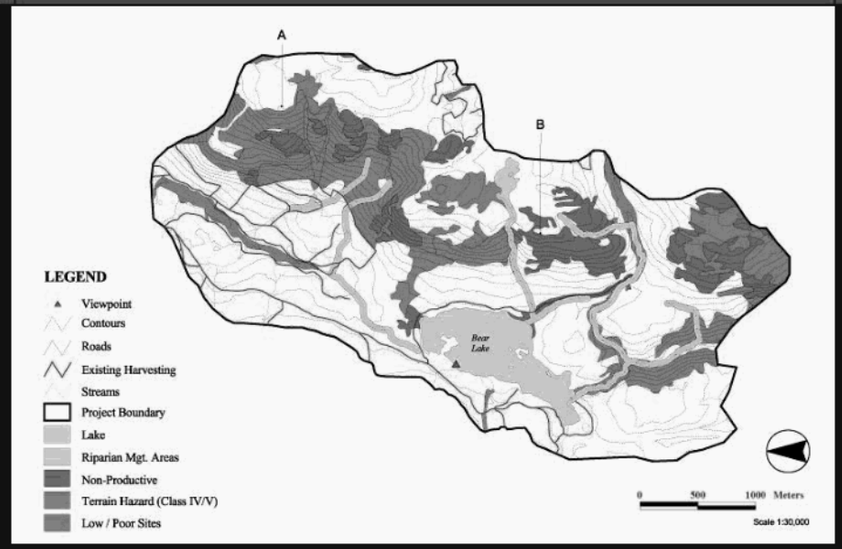


Composite Constraints – Draped on 3D Model



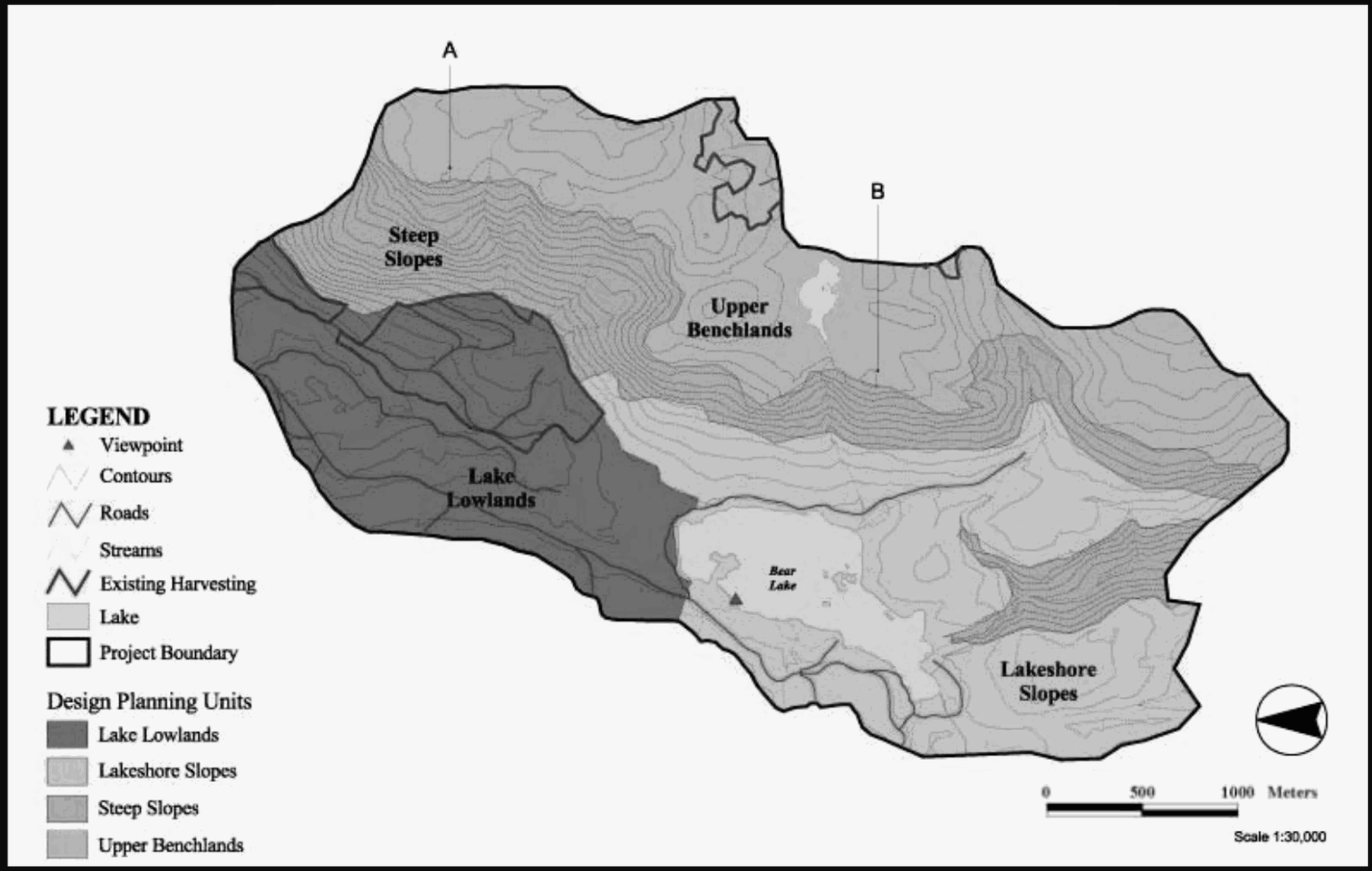
Constraints

- Lake
- Riparian Management Areas
- Non-Productive Areas
- Terrain Hazard (Class IV/V)
- Low / Poor Sites

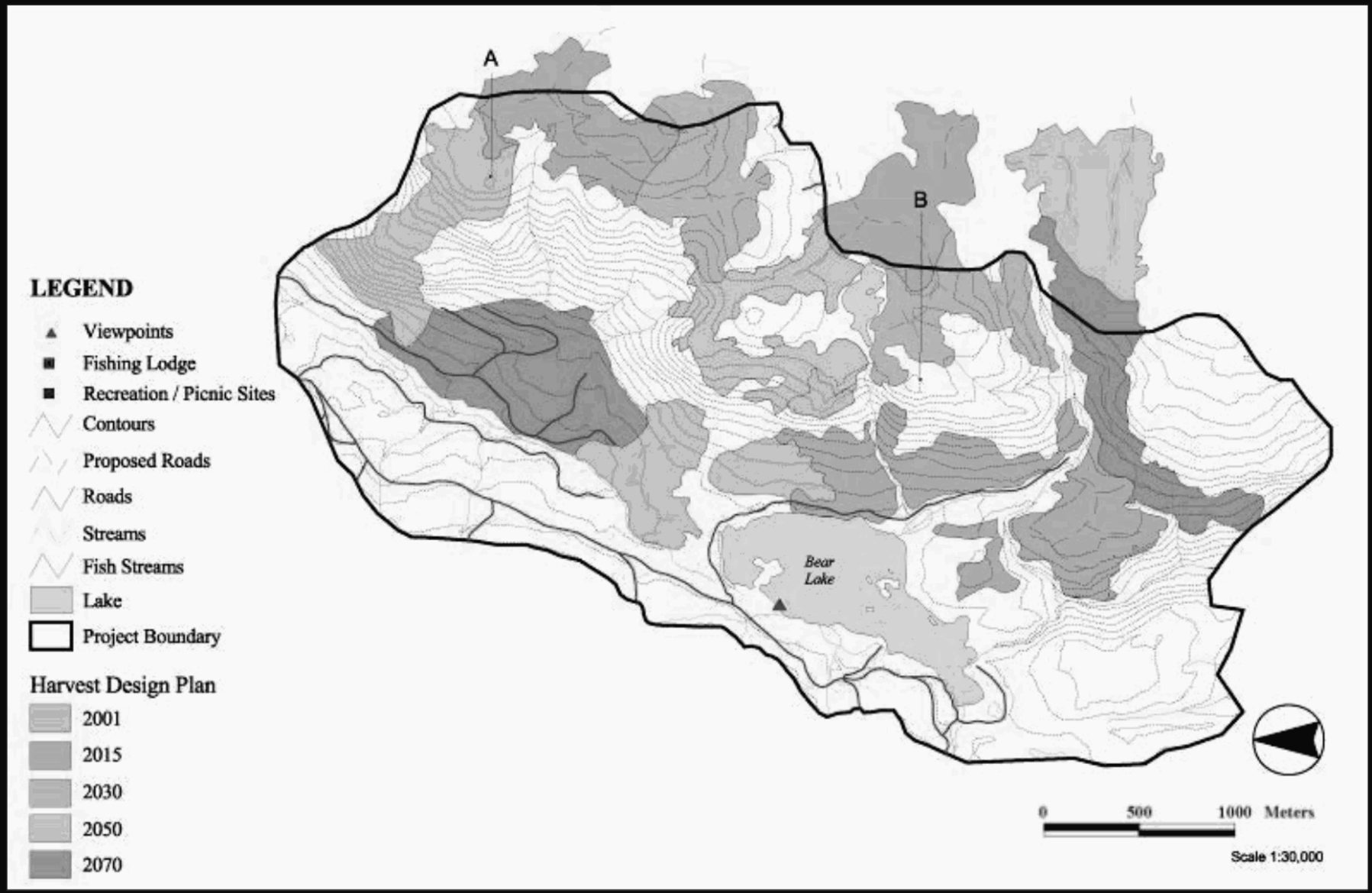


BRITISH COLUMBIA

Design Planning Units



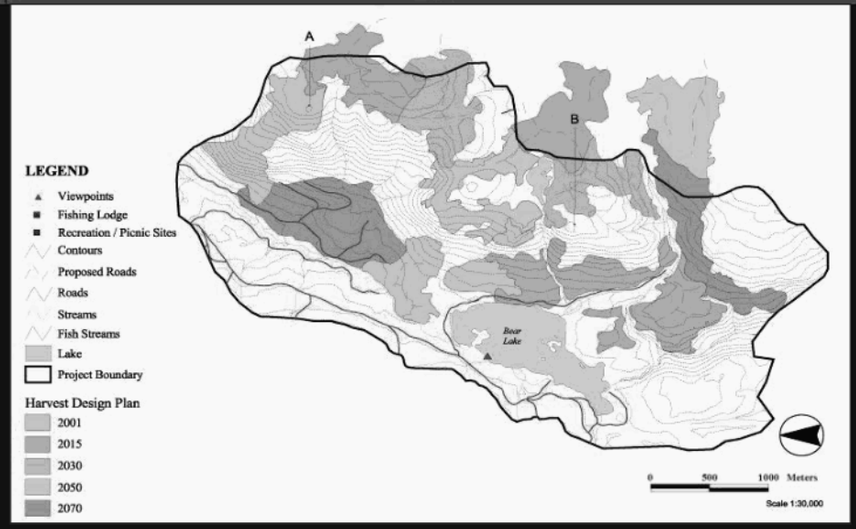
Complete Pattern of Harvest Units - Plan



Complete Pattern of Harvest Units - Perspective

Harvest Design Plan (year of entry)

- 2001 (Entry 1)
- 2015 (Entry 2)
- 2030 (Entry 3)
- 2050 (Entry 4)
- 2070 (Entry 5)

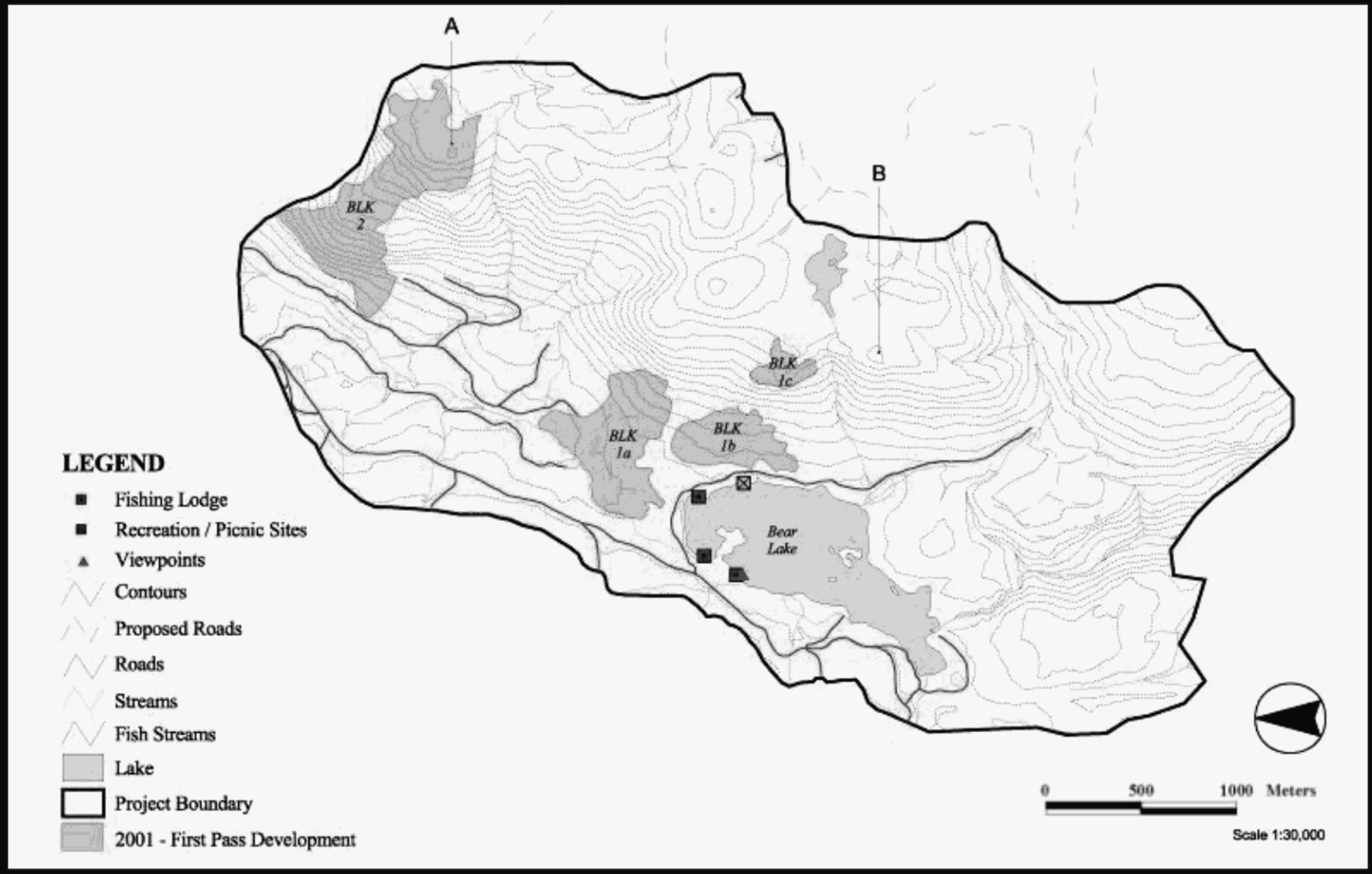


BRITISH COLUMBIA

Testing the Design Using Visual Simulation

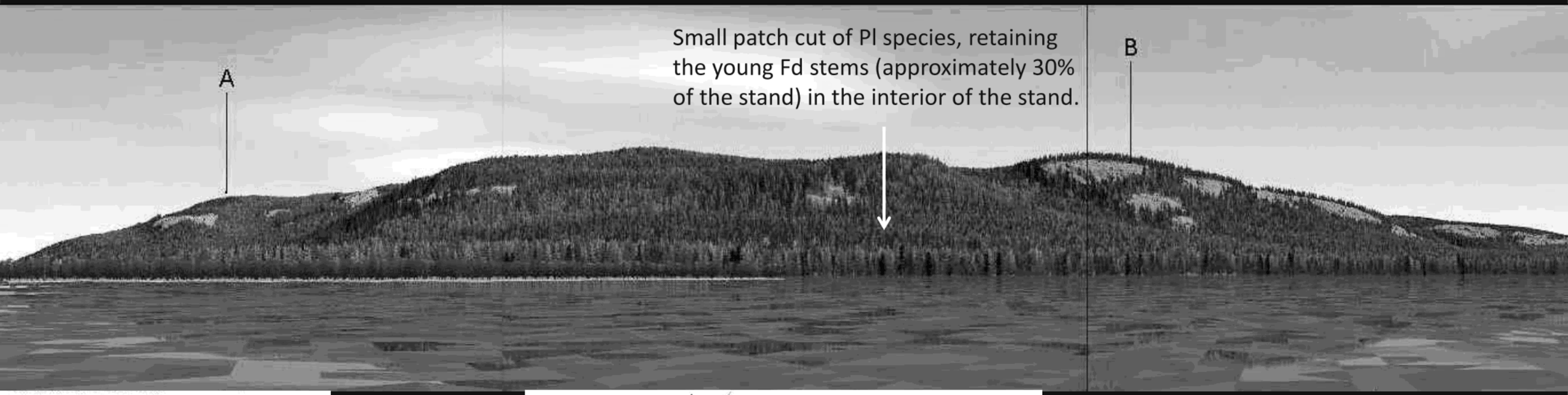
Simulation shows proposed partial cutting blocks without trees as a way to assess design.

Harvesting Proposed for 2001



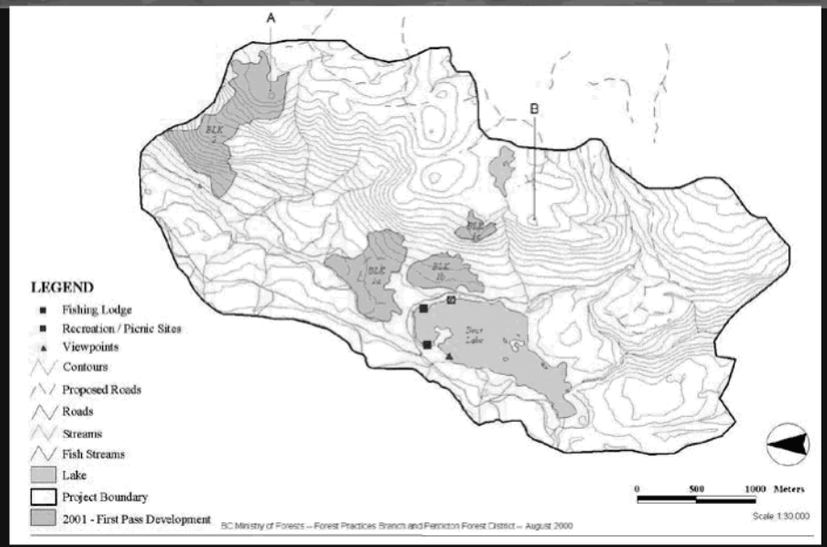
BRITISH COLUMBIA

Visual Simulation of Harvesting Proposed for 2001

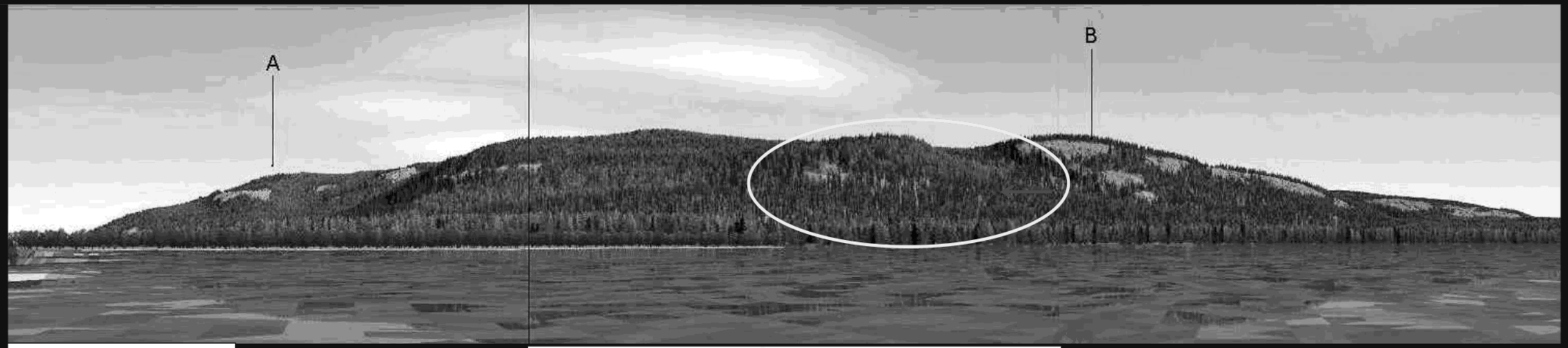


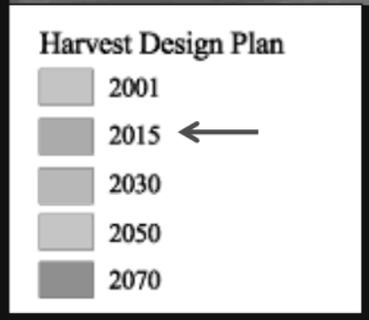
Harvest Design Plan (year of entry)

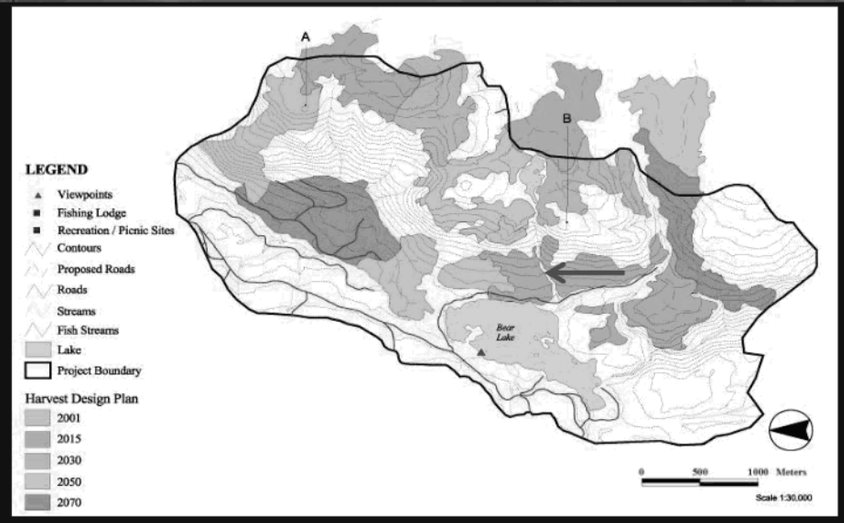
- 2001 (Entry 1) ✓ Newly altered
- 2015 (Entry 2)
- 2030 (Entry 3)
- 2050 (Entry 4)
- 2070 (Entry 5)



Visual Simulation of Harvesting Proposed for 2015







BRITISH COLUMBIA

Wrap Up.

Advantages of Visual Landscape Design

- Design is a structured, rational method of evaluating the characteristics of a landscape and a means for using that knowledge to design alterations that are integrated with it's landscape setting.
- The practicalities of implementing the design are accounted for during the process, not afterwards.
- The perspective design technique provides an instant visual impact assessment and permits communication of the visual design to the public in a manner that maps and plans cannot achieve.

- The design is based on a deep understanding of the long term and permanent features of the landscape. This ensures the plan is less likely to date.
- Using landform as a basis for shaping alterations is viewpoint independent. This means that new viewpoints that may arise are already catered for, while not hiding activities is made a virtue.
- The design process permits a wide range of values beyond visual values to be accommodated. This resolves many conflicts and helps greatly in implementing the wide range of guidelines and standards currently required.

Challenges of Visual Landscape Design

- The landscape is perceived from a different perspective: from the large scale down to the site. This takes some getting used to.
- Some of the methods of doing things on the ground: harvest systems, block layout, use of alternative silvicultural systems, for example, need to be reviewed and developed with the layout and management of irregular units in mind.

Challenges of Visual Landscape Design

- Long term thinking is required:

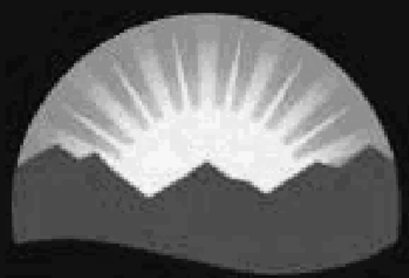
  rather than the 5 year development period concentrated on at present, 40, 50 or even 100 year time development time frames need to be considered.

- Familiarity with new approaches, processes and tools is needed:

  working in plan and perspective simultaneously, using panoramic photographs and using multiple resource values to assist in block shaping requires skill.

Costs of Visual Design

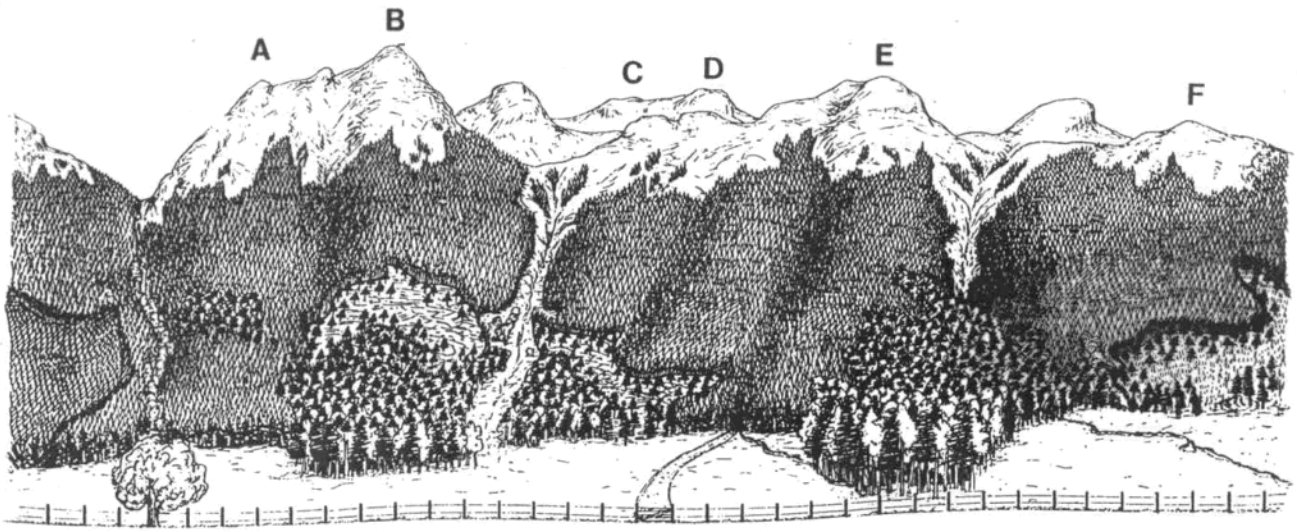
- More planning is required early on in the process.
- More people will be working together. This costs more money for planning in the short run. However, in the long run, design may save money on time to achieve approvals, implementation, public processes, loss of flexibility, etc.
- More technology is required: GIS capabilities, computer aided design, camera equipment are necessary.
- Block layout on the ground may cost more due to the complexities of irregular shapes. However, as each unit fits with the next, mutual boundaries progressively reduce the amount of layout as passes proceed.



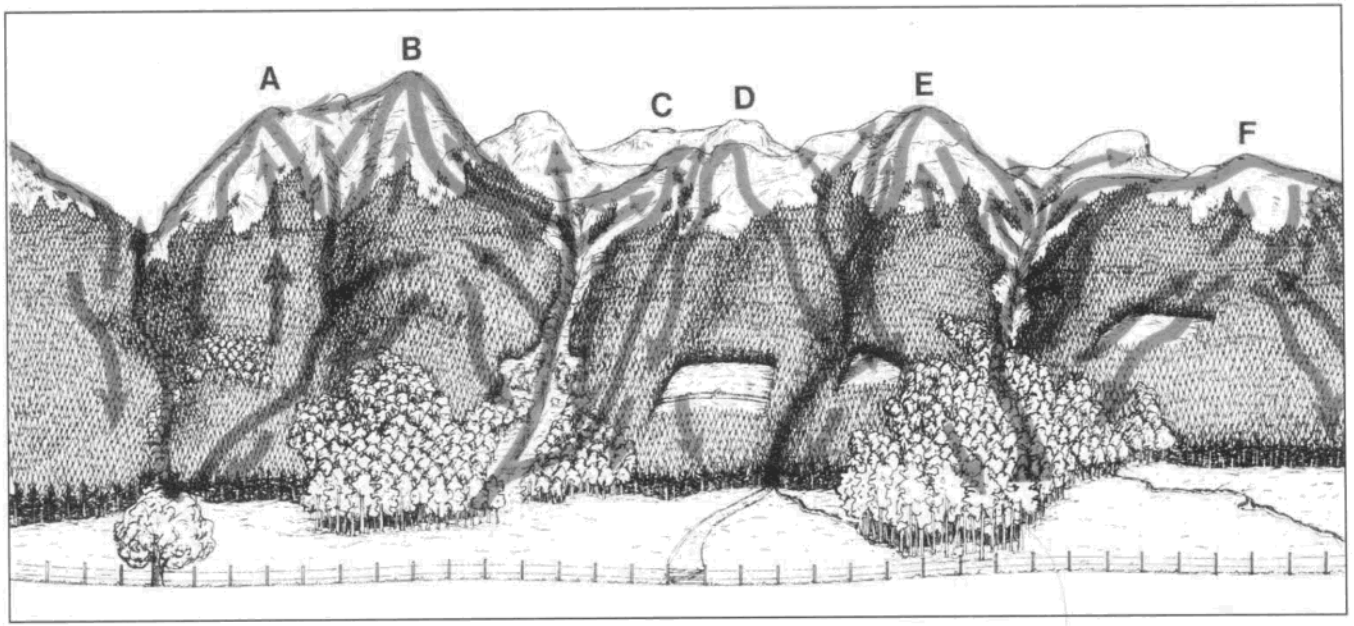
Questions?

Exercise #1-5

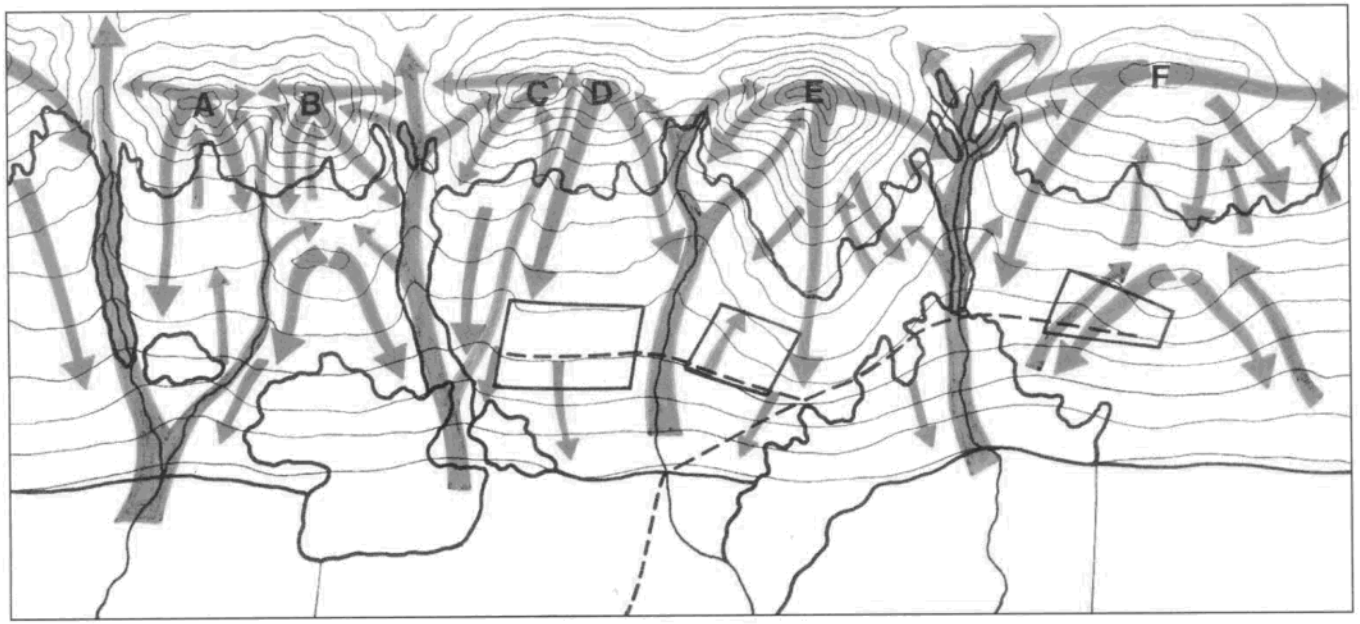
Conduct an evaluation on this opening.


A
B
C
D
E
F


A
B
C
D
E
F



A landform analysis in perspective view.



Visual Landscape Inventory

Taking Stock of Our Scenic Resource

Ministry of
Forests, Lands and
Natural Resource Operations

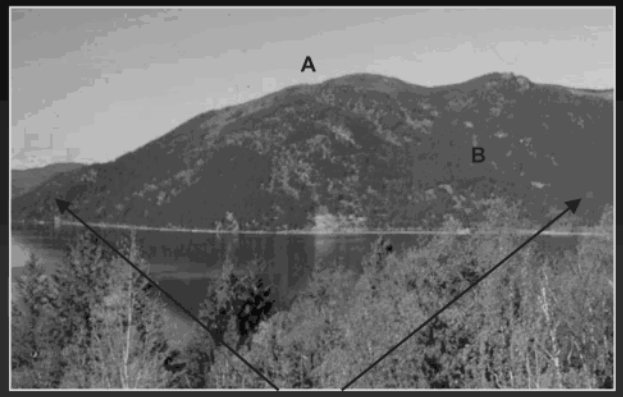
BRITISH COLUMBIA

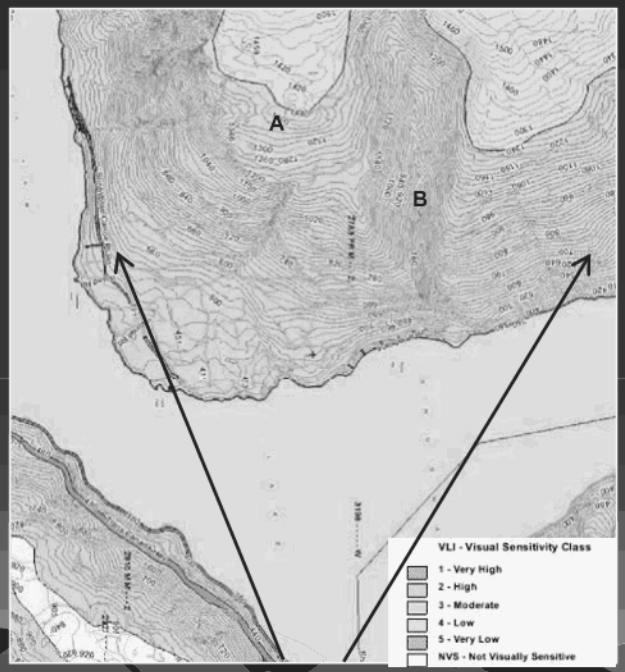
Workshop Objectives:

To learn:

- what Visual Landscape Inventory is.
- who is responsible for which activities.
- how the landscape is mapped and classified.
- what the map legend tells us.
- how VLI information is accessed & used.

VLI - What is it?





It is the identification, classification and recording of visual values on maps.

In the case of Visuals, the visible landscape is physically mapped from specific view locations and by travelling waterways and highway corridors.

As the landscape is mapped, it is assessed using 35 factors and rated for its visual sensitivity to forest alterations and assigned a Visual Sensitivity Class between 1 and 5.

VLI Responsibilities

- Prior to 2002, the CF was required to maintain an inventory of forest resources on TSAs. (FA Sect. 2.) This provision was repealed as a result of DFAM. (Revised FA Ch. 157)
- Today VLI is carried out by MFLNRO using LBIS funding on an as needed basis.
- TFL Licensees are required to maintain an inventory of forest resources (including visual resources). (FA Section 35(1)(d)(ii))

Administration Responsibilities

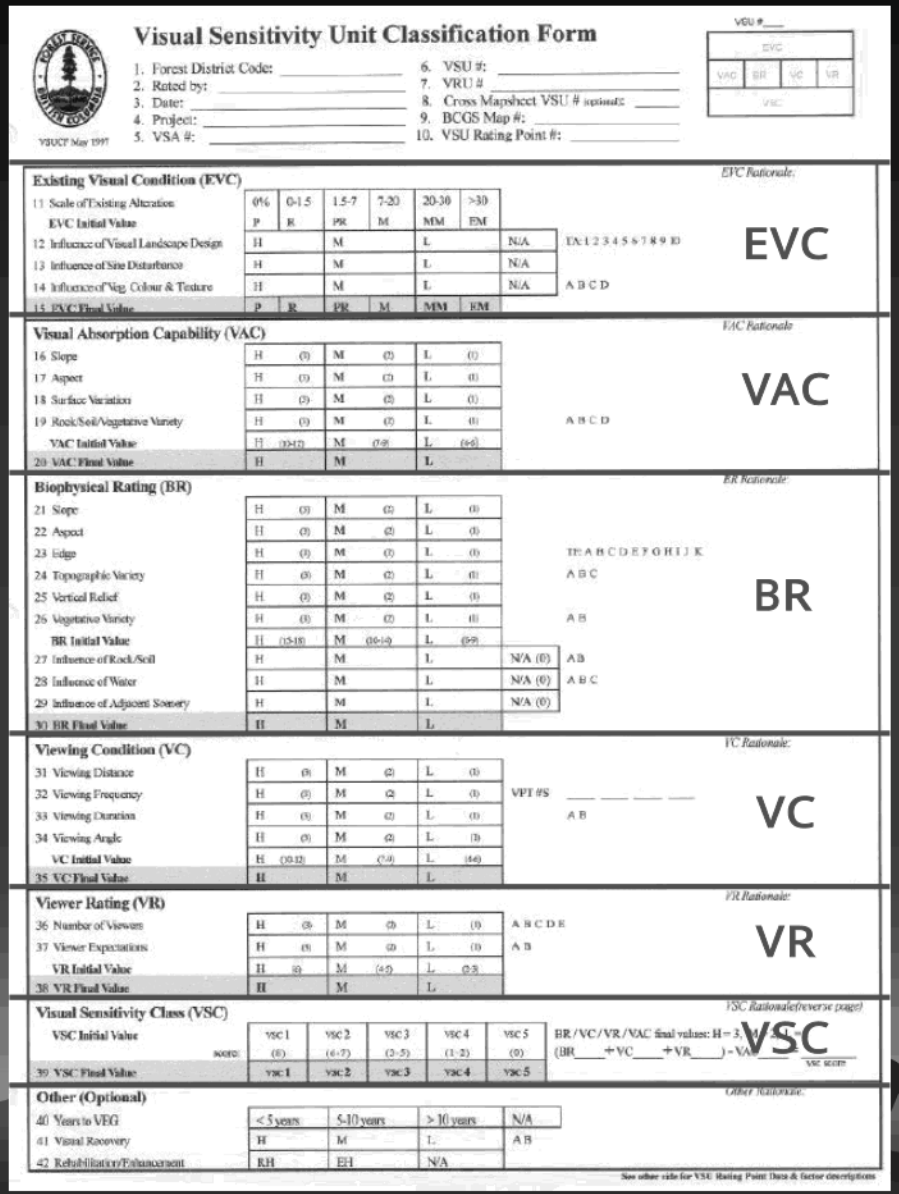
- Resource Practices Branch is the Data Custodian and is responsible for establishing province-wide policy, procedures, standards and rules for the collection, storage and retrieval of VLI business information and supports Regions & Districts.
- Information Management Branch is the Application Custodian and is responsible for sponsoring the development, maintenance and support of an application for entering, maintaining and populating the British Columbia Geographic Warehouse (BCGW).
- Data BC manages the VLI data stored in the BCGW.
- MFLNRO Resource District Managers are responsible for conducting VLI fieldwork in advance of designating scenic areas and establishing Visual Quality Objectives.
- Regions assist districts in collecting VLI data, performing quality control for VLI contract work, and assist Branch in shaping provincial policy and refining procedures and standards.

Conducting VLI

- Mapping is completed from roads, water routes, public use areas, communities, trails, etc.
- Identifies what's visible and not visible (NVS/UA)
- Delineates visible landscape into Visual Sensitivity Units (VSUs)
- Selects most representative view location for rating each VSU (*VSU Rating Point*)
- Records particulars of each Visual Sensitivity Unit:
  - Existing Visual Condition (EVC)
  - Visual Absorption Capability (VAC)
  - Biophysical Rating (BR)
  - Viewing Condition (VC)
  - Viewer Rating (VR)

- Classifies the VSU into one of five Visual Sensitivity Classes (VSC)
- VSU photography

VSU Classification Form Showing Attributes



Visual Sensitivity Unit Classification Form

1. Forest District Code:
2. Rated by:
3. Date:
4. Project:
5. VSA #:
6. VSU #:
7. VRU #
8. Cross Mapsheet VSU # (optional):
9. BCGS Map #:
10. VSU Rating Point #:

VSU #____

EVC			
VAC	BR	VC	VR
VSC			

VSUCF May 1997

Existing Visual Condition (EVC) — *EVC Rationale:*

		0-1.5	1.5-7	7-20	20-30	>30		
11 Scale of Existing Alteration	0%							
EVC Initial Value	P	R	PR	M	MM	EM		
12 Influence of Visual Landscape Design	H		M		L		N/A	TA: 1 2 3 4 5 6 7 8 9 E
13 Influence of Site Disturbance	H		M		L		N/A	
14 Influence of Veg. Colour & Texture	H		M		L		N/A	A B C D
15 EVC Final Value	P	R	PR	M	MM	EM		

EVC

Visual Absorption Capability (VAC) — *VAC Rationale*

16 Slope	H	(3)	M	(2)	L	(1)
17 Aspect	H	(3)	M	(2)	L	(1)
18 Surface Variation	H	(3)	M	(2)	L	(1)
19 Rock/Soil/Vegetative Variety	H	(3)	M	(2)	L	(1)
VAC Initial Value	H	(10-12)	M	(7-9)	L	(4-6)
20 VAC Final Value	H		M		L	

A B C D

VAC

Biophysical Rating (BR) — *BR Rationale:*

21 Slope	H	(3)	M	(2)	L	(1)	
22 Aspect	H	(3)	M	(2)	L	(1)	
23 Edge	H	(3)	M	(2)	L	(1)	TE: A B C D E F G H I J K
24 Topographic Variety	H	(3)	M	(2)	L	(1)	A B C
25 Vertical Relief	H	(3)	M	(2)	L	(1)	
26 Vegetative Variety	H	(3)	M	(2)	L	(1)	A B
BR Initial Value	H	(15-18)	M	(10-14)	L	(6-9)	
27 Influence of Rock/Soil	H		M		L		N/A (0) A B
28 Influence of Water	H		M		L		N/A (0) A B C
29 Influence of Adjacent Scenery	H		M		L		N/A (0)
30 BR Final Value	H		M		L		

BR

Viewing Condition (VC) — *VC Rationale:*

31 Viewing Distance	H	(3)	M	(2)	L	(1)
32 Viewing Frequency	H	(3)	M	(2)	L	(1)
33 Viewing Duration	H	(3)	M	(2)	L	(1)
34 Viewing Angle	H	(3)	M	(2)	L	(1)
VC Initial Value	H	(10-12)	M	(7-9)	L	(4-6)
35 VC Final Value	H		M		L	

VPT #S ____ ____ ____ ____

A B

VC

Viewer Rating (VR) — *VR Rationale:*

36 Number of Viewers	H	(3)	M	(2)	L	(1)
37 Viewer Expectations	H	(3)	M	(2)	L	(1)
VR Initial Value	H	(6)	M	(4-5)	L	(2-3)
38 VR Final Value	H		M		L	

A B C D E

A B

VR

Visual Sensitivity Class (VSC) — *VSC Rationale(reverse page)*

		VSC 1	VSC 2	VSC 3	VSC 4	VSC 5
VSC Initial Value	score:	(6)	(4-7)	(2-5)	(1-2)	(0)
39 VSC Final Value		VSC 1	VSC 2	VSC 3	VSC 4	VSC 5

BR/VC/VR/VAC final values: H = 3, M = 2, L = 1

(BR____+VC____+VR____)-VAC____=____

VSC score

VSC

Other (Optional) — *Other Rationale:*

40 Years to VEG	< 5 years	5-10 years	> 10 years	N/A
41 Visual Recovery	H	M	L	A B
42 Rehabilitation/Enhancement	RH	EH	N/A	

See other side for VSU Rating Point Data & factor descriptions

10. VSU Rating Point Data:	Print:	Slide:	Digital Image	Videocassette
VSU Rating Point Number				
10.1 Viewpoint Type: rating point (V0), major (V1); minor (V2); potential (V3)				
10.2 Elevation of the VSU Rating Point (meters)				
10.3 Latitude and Longitude (UTM) Coordinates (optional)				
10.4 BCGS Map Number of VSU Rating Point				
10.5 Compass Bearing (0-360 degrees)				
10.6 Vertical Viewing Angle (0-90 degrees ±)				
10.7 Roll Number (start-end frame number)	/ /	/ /	/ /	/ /
10.8 Focal Length of Lens (mm)				

VIEWPOINT INFO

EVC

11 Scale of Existing Alteration			
12 Influence of Vis. Landscape Design	H (greater)	M (moderate)	L (lesser)
13 Influence of Site Disturbance	H (dominant)	M (moderate)	L (subordinate)
14 Influence of Veg. Colour & Texture	H (strong)	M (moderate)	L (weak)
15 Existing Visual Condition	P - R - PR - M - MM		

VAC

16 Slope	H (0 - 30%)	M (30 - 60%)	L (>60%)
17 Aspect	H (NW/N/NE)	M (E-W)	L (SW/S/SE)
18 Surface Variation	H (high)	M (moderate)	L (low)
19 Rock/Soil/Vegetative Variety	H (high)	M (moderate)	L (low)
20 Visual Absorption Capability	H (high)	M (moderate)	L (low)

BR

21 Slope	H (>60%)	M (30-60%or)	L (0 - 30%)
22 Aspect	H (SW/S/SE)	M (E-W)	L (NW/N/NE)
23 Edge	H(high)	M(moderate)	L(low)
24 Topographic Variety	H(high)	M(moderate)	L(low)
25 Vertical Relief	H (800m+)	M (200-800m)	L (<200m)
26 Vegetative Variety	H(high)	M(moderate)	L(low)
27 Influence of Rock/Soil	H(high)	M(moderate)	L(low)
28 Influence of Water	H(high)	M(moderate)	L(low)
29 Influence of Adjacent Scenery	H(high)	M(moderate)	L(low)
30 Biophysical Rating	H(high)	M(moderate)	L(low)

Further Notes

VC

31 Viewing Distance	H (0-1km)	M (1-8km)	L (8km +)
32 Viewing Frequency	H (> 5 vpts)	M (3-4 vpts)	L (<2 vpts)
33 Viewing Duration	H (long)	M (moderate)	L (short)
34 Viewing Angle	H (focal)	M (tangent)	L (peripheral)
35 Viewing Condition	H (high)	M (moderate)	L (low)

VR

36 Number of Viewers	H (high)	M (moderate)	L (low)
37 Viewer Expectations	H (high)	M (moderate)	L (low)
38 Viewer Rating	H (high)	M (moderate)	L (low)

VSU DESCRIPTORS

39 Visual Sensitivity	1 2 3 4 5		

Other (Optional)

40 Years to VEG	< 5 yrs	5-10 yrs	> 10yrs
41 Visual Recovery	H (high site)	M (mod. site)	L (Low site)
42 RH/EH/NA	Rehabilitation	Enhancement	N/A

NOTES

BRITISH COLUMBIA

Definitions of Terms

Existing Visual Condition (EVC):

Identifies the existing level of human made alterations on the landscape at the time the inventory is conducted. The terminology used is the same as for VQOs except that it has one more Class (Excessive Modification).

Definitions of Terms

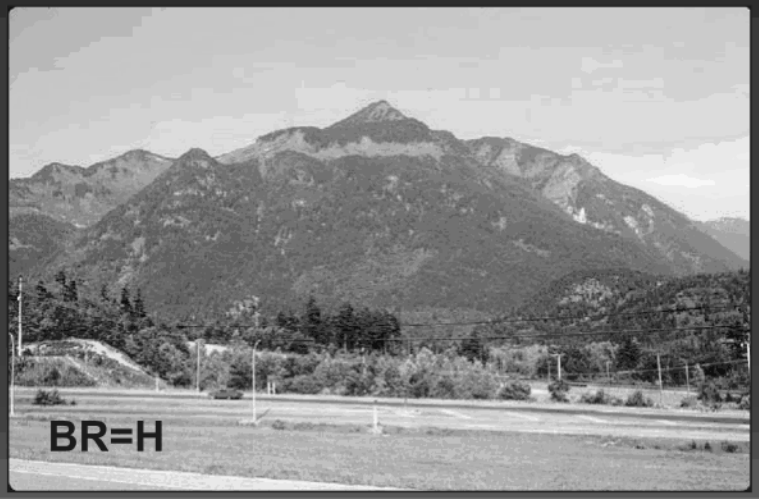
Visual Absorption Capability (VAC):

Rates the relative capacity of the landscape to absorb human made alterations and still maintain some visual integrity. The scale is high, medium, low. The higher the rating the more ability to absorb alteration.

Definitions of Terms

Biophysical Rating (BR):

Identifies the degree of visual interest in the landscape and rates the level that it would attract viewer attention. The scale is high, medium low. The higher the attraction, the more sensitive it is.



Definitions of Terms

Viewing Condition (VC):

Records the conditions under which the landscape is viewed such as viewing duration and number of viewpoints. The scale is high, medium & low. The higher the rating, the more frequently the landscape is seen, the greater the number of viewpoints, the longer the viewing duration, the more sensitive it is.

Coquihalla Hwy.

Definitions of Terms

Viewer Rating (VR):

Measures the number of people and their expectations for visual quality. Ratings are high, medium & low. The higher the rating the more people view the landscape and/or are more concerned.

Definitions of Terms

Visual Sensitivity Class (VSC):

VLI culminates in a visual sensitivity class rating which identifies how sensitive the landscape is to visual alteration based on the VAC, biophysical, viewing and viewer characteristics described previously. The rating scale is 1 to 5.

Class 1 is very high sensitivity to alteration.

Class 5 has a very low sensitivity to alteration.

Visual Sensitivity Classes

VSC 1 Very high sensitivity to human-made visual alteration. Extremely important to Viewers, very high probability that the public would be concerned if the VSU was visually altered in any way or to any scale.

VSC 2 High sensitivity to human-made visual alteration. Very important to viewers. There is a high probability that the public would be concerned if the VSU was Visually altered.

VSC 3 Moderate sensitivity to human-made visual alteration. Important to viewers. There is a probability that the public would be concerned if the VSU was visually altered.

VSC 4 Low sensitivity to human-made visual alteration. The area is moderately Important To viewers. There is a risk that the public would be concerned if the VSU Unit was visually altered.

VSC 5 Very low sensitivity to human-made visual alteration. Somewhat important to viewers. There is a small risk that the public would be concerned if the VSU was visually altered.

Example of VSC 1

- Meares Island, Tofino. A spectacular and very attractive landscape.
- Viewed and photographed by hundreds of thousands of people per year from Tofino.
- High biophysical rating, low VAC.
- This is an example of a regional feature and top end VSC-1

Example of VSC 2

- Mountain along the Tuchodi River
- Another spectacular, attractive mountain.
- Unlike Meares Island this peak is in a remote area where viewer numbers are low.
- VAC is moderate.
- The area is used mainly by ATV riding hunting and fishing.

Example of VSC 3

- Hillside above Shuswap Lake.
- The VSU has a moderate biophysical rating
- Viewing is from Highway 1 for a short time at an oblique angle.
- Expectations are lower because of existing alterations in the scene and the similarity of the adjacent scenery.

Example of VSC 4

- An uninteresting VSU in the middleground.
- It has a moderate to low biophysical rating and moderate VAC.
- It is viewed infrequently from a secondary road and from a farm.

Example of VSC 5

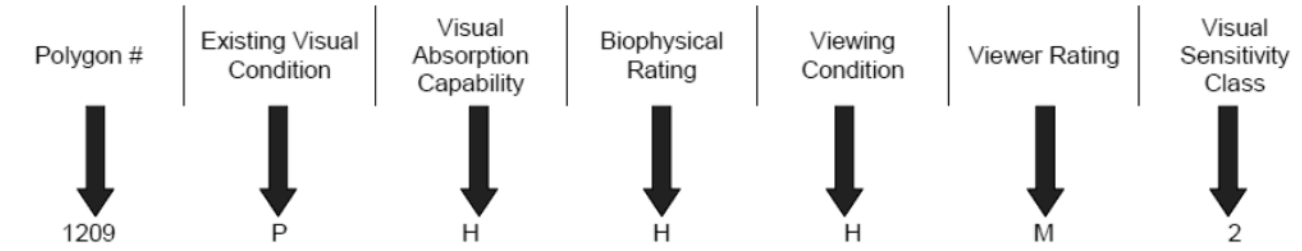
- An uninteresting VSU in the mid ground.
- It has a low biophysical rating and medium VAC.
- Infrequent and short term viewing opportunities from a gravel road with low traffic numbers.

Understanding the Coding

When the Inventory mapping is complete a map label is applied to each polygon.

An example of the VLI Label from the web map is shown below as:

1209 P H H H M 2



Exercise #1-2

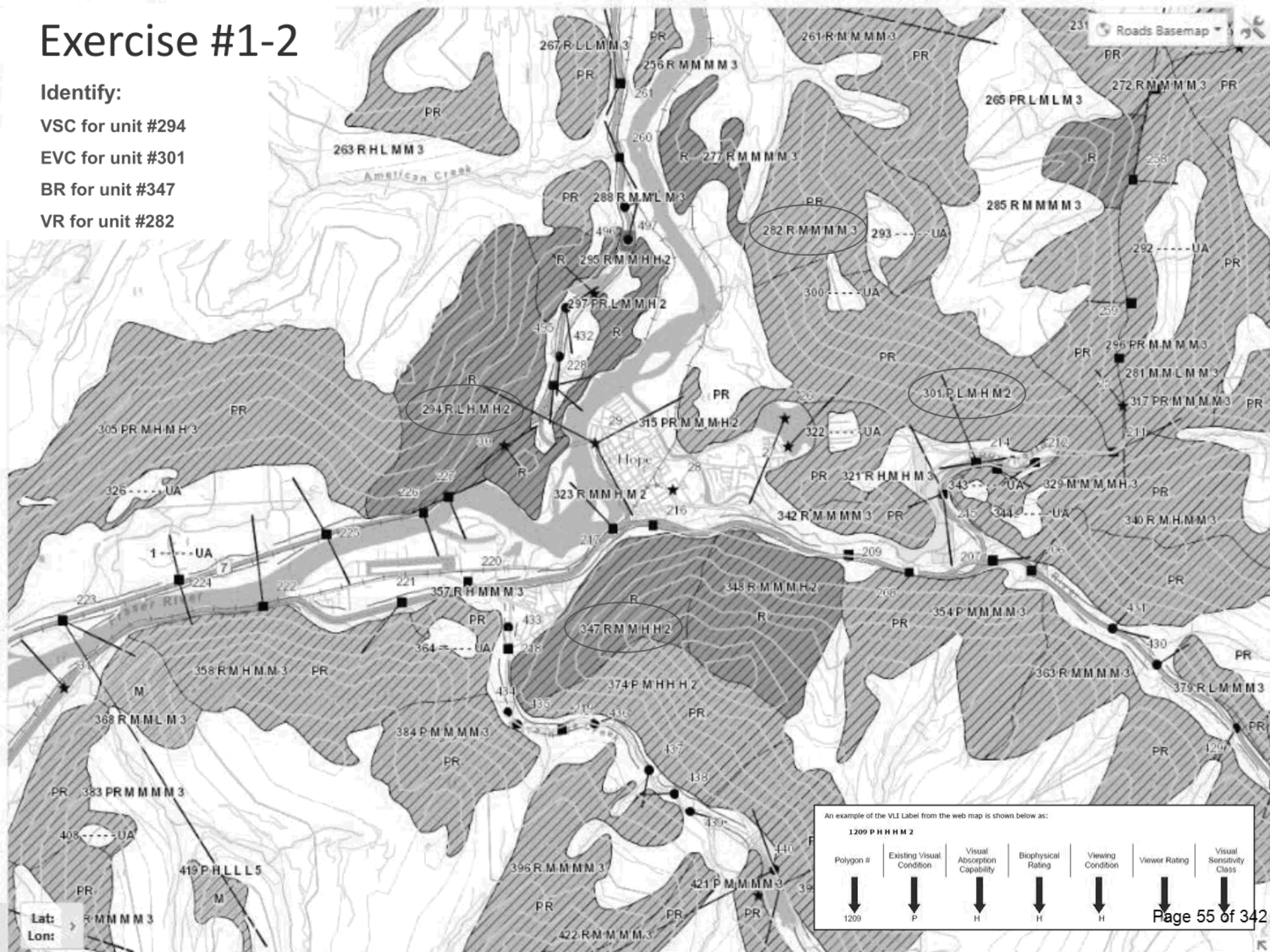
Identify:

VSC for unit #294

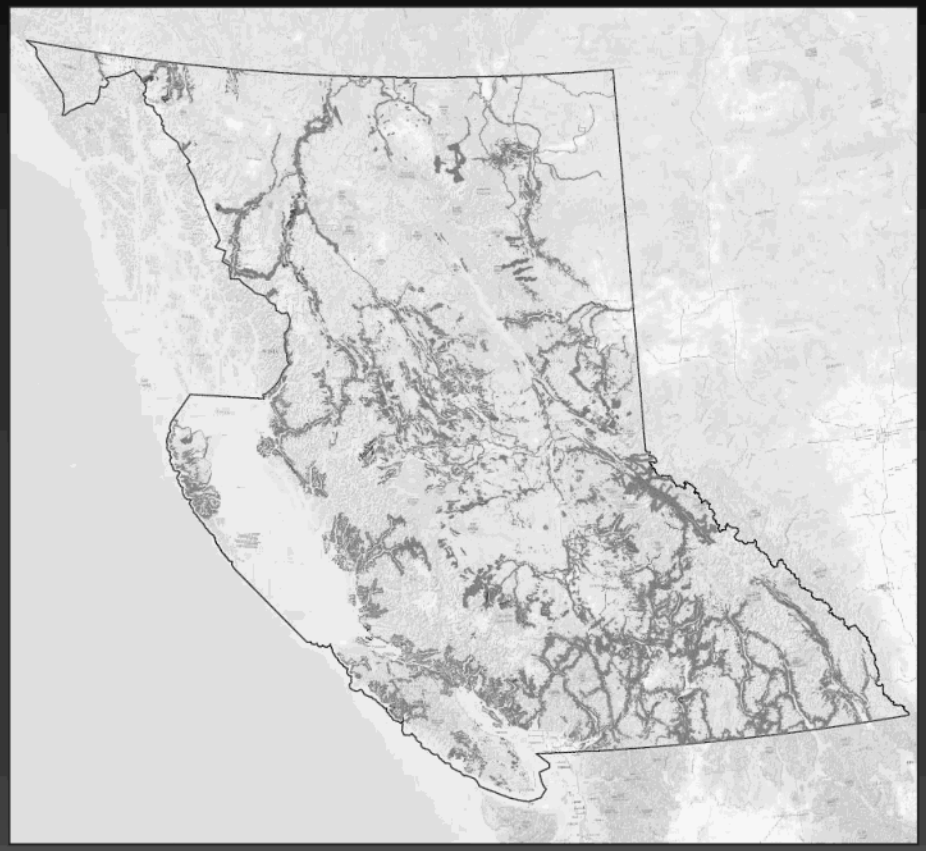
EVC for unit #301

BR for unit #347

VR for unit #282



Visual Landscape Inventory

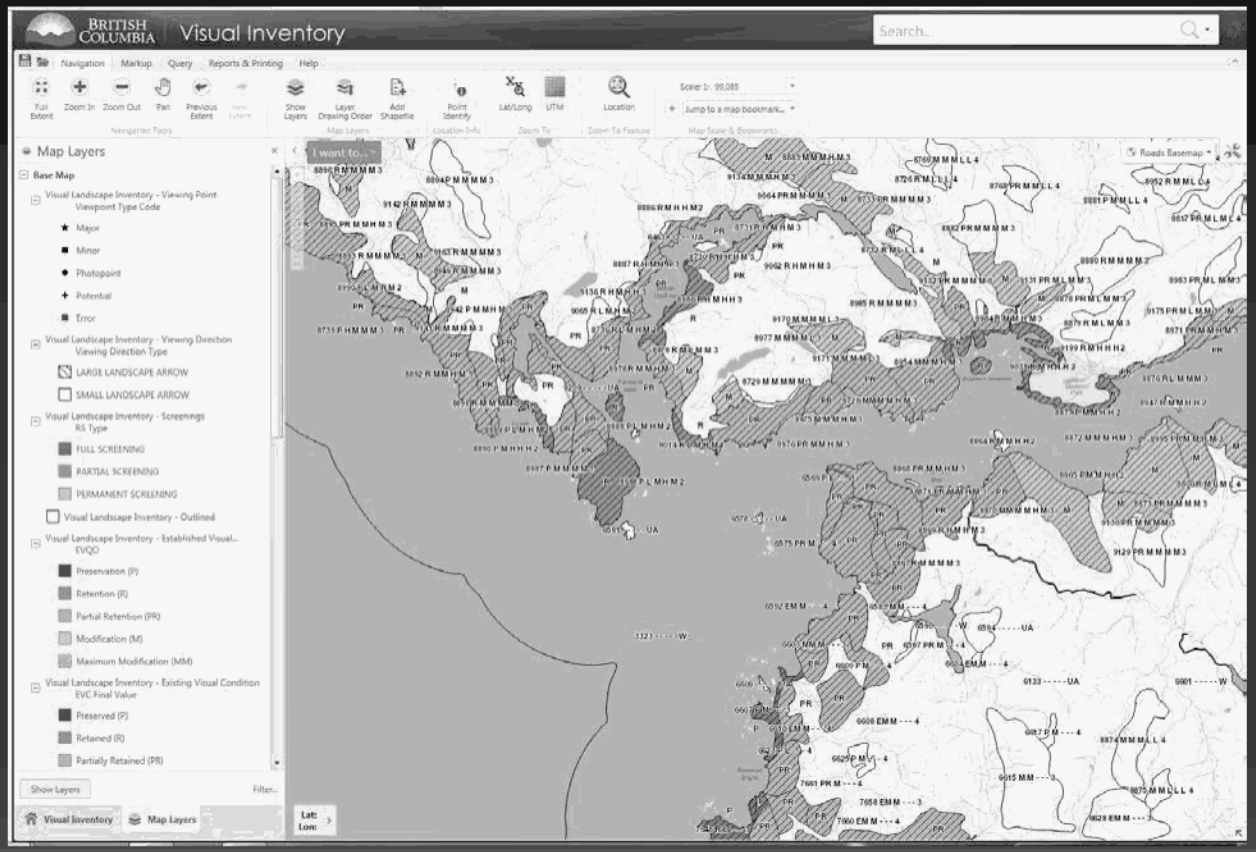


16.0 Million Hectares Inventoried

Once field mapping is complete, the line work is digitized as shape files and the attribute information for each polygon is entered in a corresponding data base.

This information goes through a QA process and is uploaded to the BCGW where it is stored.

Visual Landscape Inventory

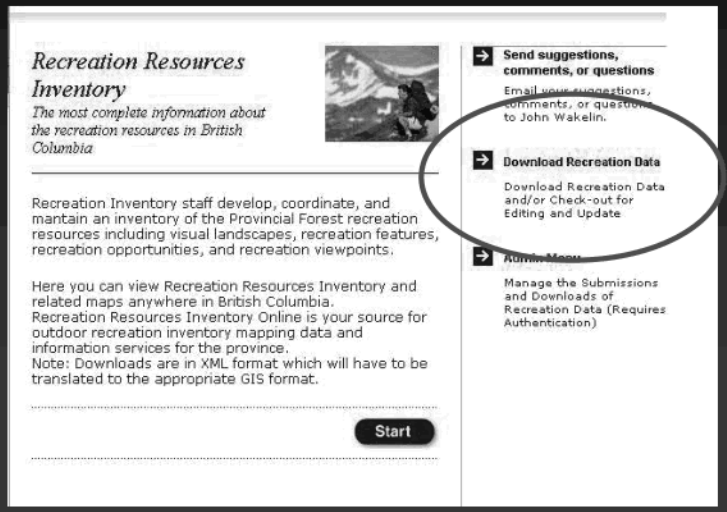


Members of the public, industry or Government can view the VLI data including VQOs using the Visual Inventory Viewer , Mapview or I-Map.

http://maps.gov.bc.ca/ess/sv/visinv/

Visual Landscape Inventory

If you are a GIS Operator and wish to down load VLI Data there are two approaches:



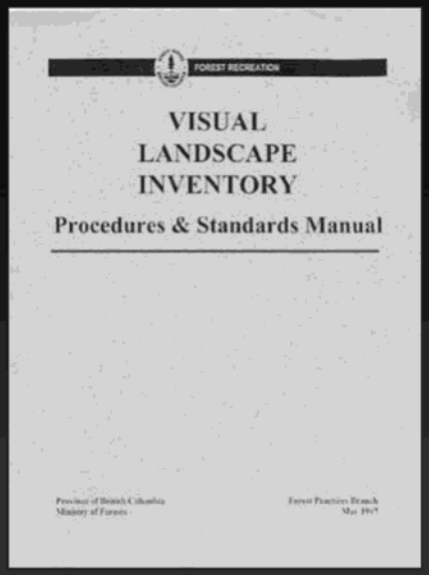
1) Through RRI Online Application: http://apps.gov.bc.ca/pub/rec/

2) Sign in to DataBC as a guest, type in "VLI" in the Search box and follow the links leading to the download page. You can download files in various format including ArcView Shape by AOI or map sheet number."

VLI Uses

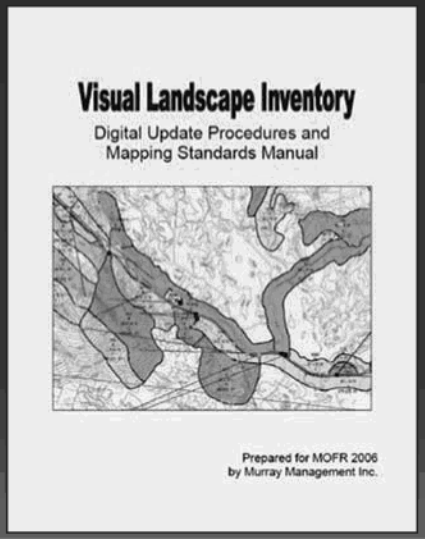
The VLI and it's associated database and management decisions are routinely used in the following applications:

- Timber Supply Analyses
- Input to Strategic Planning and Operational Plans
- Input into Major Project Applications (LNG, Windfarms, etc.)
- Input to Environmental Assessments
- Provides OSBG for Scenic Areas under FRPA
- Source of established VQOs
- Monitoring e.g. FREP, C&E & FPB Audits



VLI Procedures & Standards Manual available from website.

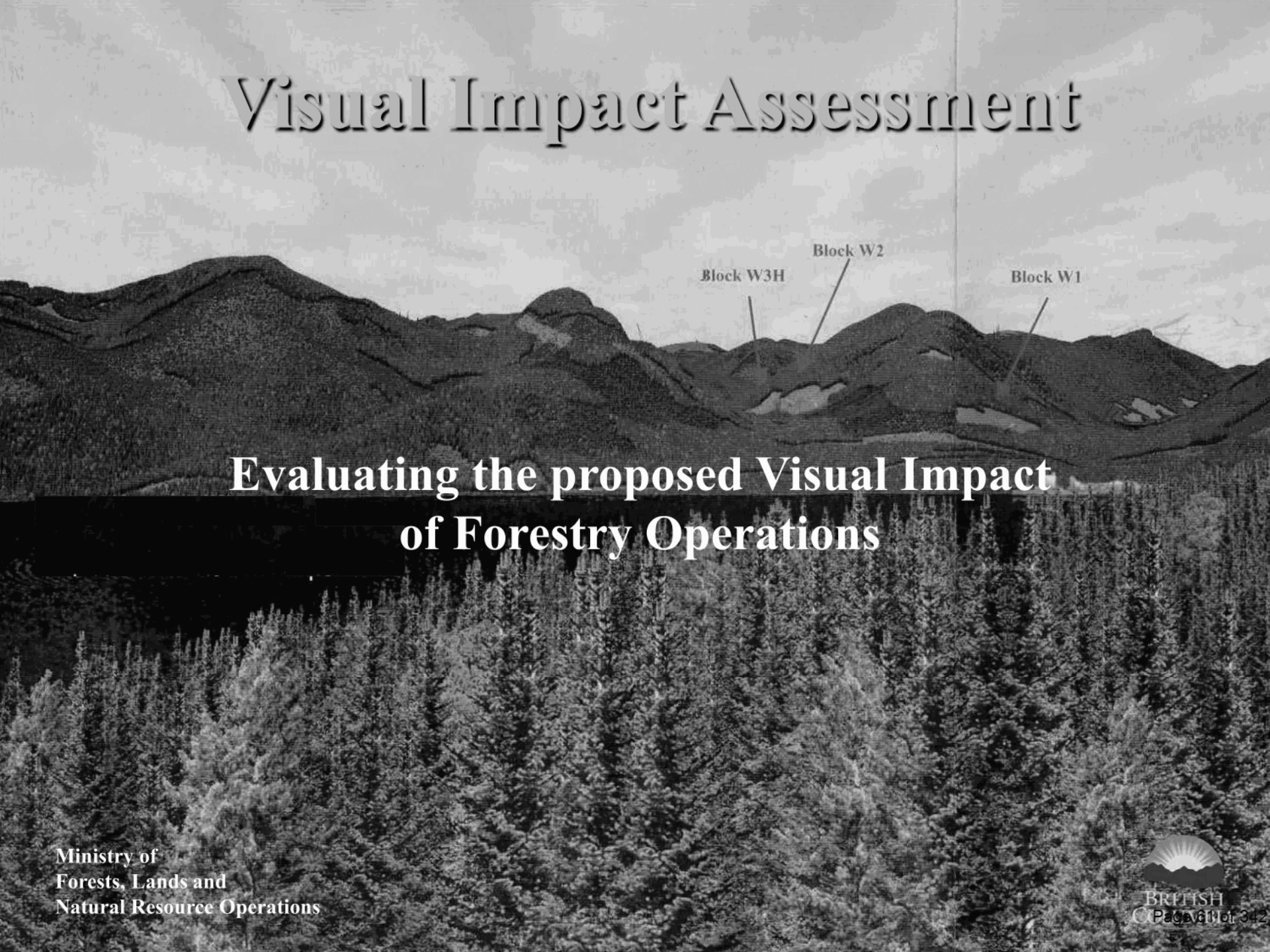
http://www2.gov.bc.ca/gov/content/industry/forestry/managing-our-forest-resources/visual-resource-management/visual-landscape-inventory



Digital Update Procedures & Mapping Standards Manual available from website.

http://www2.gov.bc.ca/gov/content/industry/forestry/managing-our-forest-resources/visual-resource-management/visual-landscape-inventory

Visual Impact Assessment



Evaluating the proposed Visual Impact of Forestry Operations

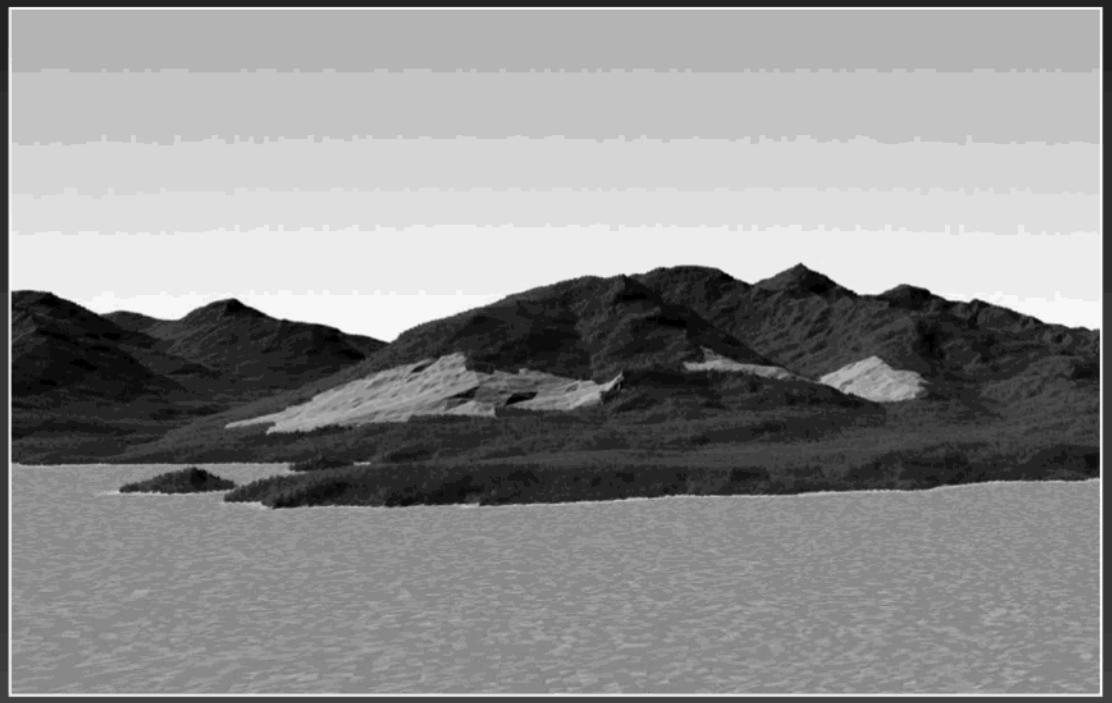
Ministry of
Forests, Lands and
Natural Resource Operations

BRITISH COLUMBIA

Visual Impact Assessment

What is a Visual Impact Assessment (VIA)?

It is an assessment of the predicted visual impact of a forestry operation in perspective view.



Visual Impact Assessment

A VIA is not just a visual simulation!

It is an iterative process that involves:

- **Selecting viewpoints**
- **Describing the landscape's visual character**
- **Simulating views of proposals from the viewpoints**
- **Reviewing the simulations to determine if VQOs will be achieved.**
- **Adjusting block pattern size and/or shape as necessary**
- **Documenting the process used.**

Visual Impact Assessment

Visual Impact Assessments were a legal requirement under the Code.

They are are not a legal requirement under FRPA.

However, due diligence suggests that some level of assessment is required in order for a professional to demonstrate that the results/strategies prescribed in the FSP will be consistent with VQO for an area.

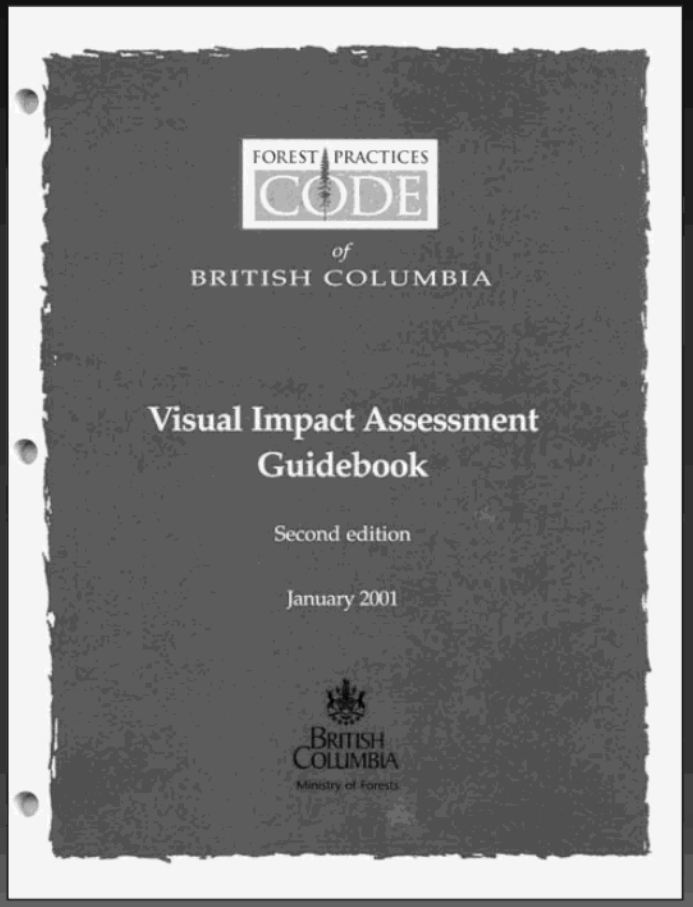
The ABCFP Standards of Professional Practice require RPFs and RFT's to exercise due diligence in completing their work. Completing a VIA to an appropriate standard would be evidence of this when managing for visual quality.

Visual Impact Assessment

The VIA Guidebook was released as part of the Forest Practices Code and still provides sound technical advice.

It suggests that the level and detail of a VIA may vary depending on a number of factors e.g. VSC, numbers of people, level of public concern, range of viewing opportunities, and established VQO.

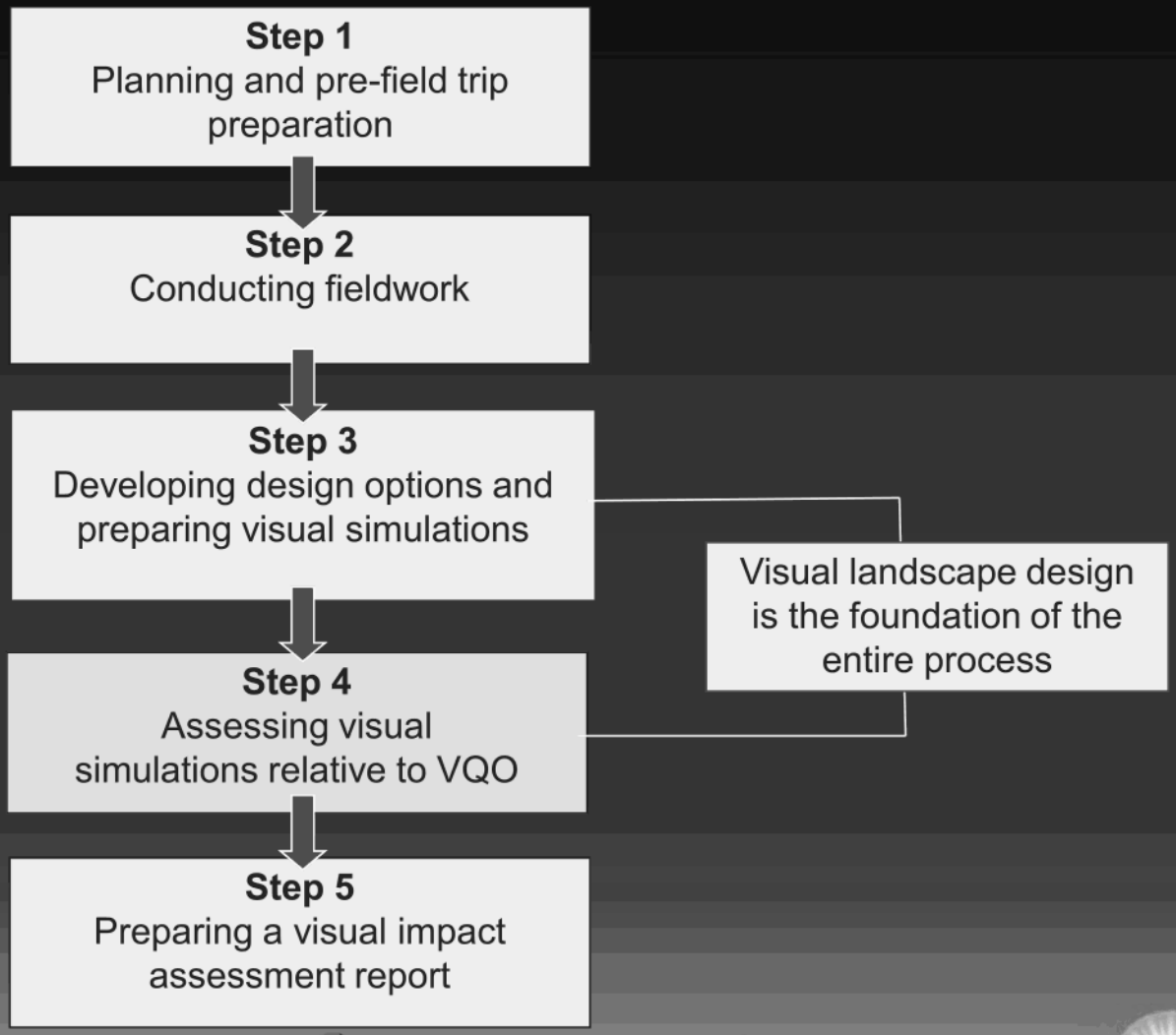
One Caution: The VQO definitions used in the VIA Guidebook have been replaced with legal definitions in s.1.1 of FPPR.



Visual Impact Assessment

- In situations with a highly sensitive landscape and/or large numbers of viewers a comprehensive VIA may be required.
- An intensive VIA would include digital terrain modeling, photographic panoramas and TRIM contour mapping with viewpoints identified.
- In situations with a less sensitive landscape a map, form, and photograph of the area with an overlay showing relative block size, location and configuration may be appropriate.

Visual Impact Assessment Approach



Visual Impact Assessment

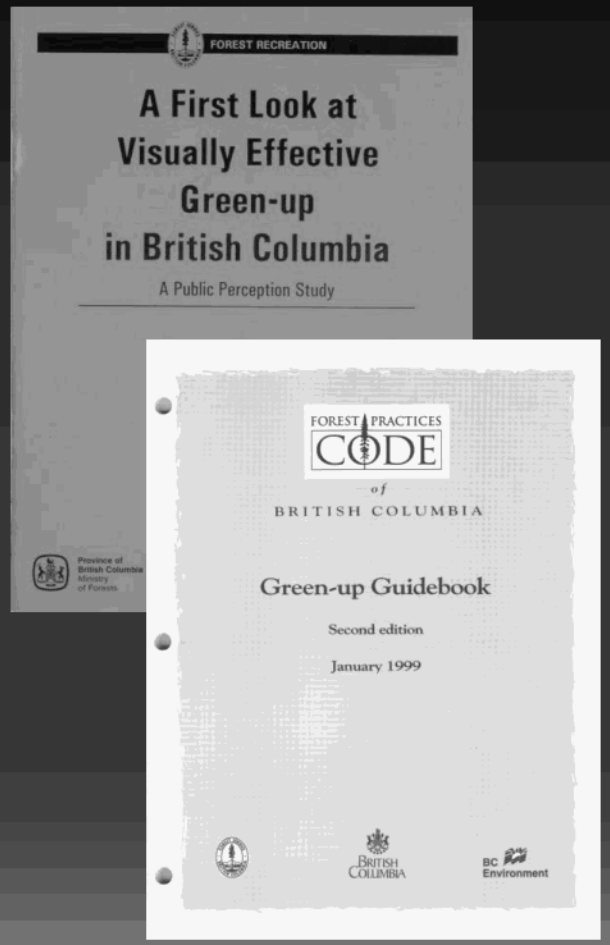
Step 4: Assessing visual simulations

- **The purpose of this step is to evaluate whether the proposed operation will achieve the established VQO.**
- **The Forest Planning and Practices Regulation S.1.1 defines 5 categories of altered forest landscapes relating to VQOs, which are assessed from a significant public viewpoint.**
- **A significant public viewpoint means: a *place or location on the water or land that is accessible to the public and has relevance to the landscape being assessed.*** *(Note: under the Interpretation Act singular means plural.)*
- **In addition to the proposed operation, existing non-visually greened-up alterations within the unit must be considered.**

Visually Effective Green-up.

Visually Effective Green Up is well defined and has been around since the mid 1990's. It was a requirement under the Code for adjacency and was defined in the VEG research report, Green-up Guidebook and VIA Guidebook.

Visually Effective Green-up (VEG) is the stage at which the regeneration on a cut block is perceived by the public as a newly established forest. The forest cover on the cut block should generally be of sufficient height to block stumps logging debris and bare ground from view.



Visual Impact Assessment

DEFINITION: To be consistent with a VQO, all existing and proposed operations must meet the definition for the specific altered landscape (VQO) from each viewpoint. This is an ocular assessment which examines size, shape and design of the alterations relative to the landform being assessed.

SCALE OF ALTERATION: Based on research, we have learned that some numerical data such as % landform alteration for clear cutting and stems/volume removed for partial cutting can be good predictors of VQOs.

DESIGN: Visual design of proposals is also critical to achieving VQOs. Alterations that borrow from natural characteristics will more easily achieve VQOs and also get public support. We will examine visual design concepts & principles in day two.

Definitions of Altered Landscapes

Preservation:	very small in scale, and not easily distinguishable from the pre-harvest landscape
Retention:	(i) difficult to see, (ii) small in scale, and (iii) natural in appearance.
Partial Retention:	(i) easy to see, (ii) small to medium in scale, and (iii) natural and not rectilinear or geometric in shape.
Modification:	is very easy to see, and is (A) large in scale and natural in its appearance, or (B) small to medium in scale but with some angular characteristics;
Maximum Modification:	very easy to see, and (ii) is (A) very large in scale, (B) rectilinear and geometric in shape, or (C) both

Scale of Alteration for Clear-cutting

The table below shows the VQO likely to be achieved given planned scale of alteration.

VQC/VQO	% Alt Range by VQO In Perspective
Preservation	0
Retention	0 - 1.5
Partial Retention	1.6 - 7.0
Modification	7.1 - 18.0
Max Modification	18.1 - 30.0+

(Source: *Clear cutting and Visual Quality*, 1996)

Volume/Stems Removed for Partial Cutting

The table below shows VQO likely to be achieved given planned retention levels.

Volume (Stems) Removed in % \ Tree Height (Metres)	5	10	15	20	25	30	35	40	45	50
10	R	R	R	R	R	R	R	R	PR	PR
20	R	R	R	R	R	R	PR	PR	PR	PR
30	R	R	R	R	PR	PR	PR	PR	PR	PR
40	R	R	PR	PR	PR	PR	PR	PR	PR	M
50	PR	PR	PR	PR	PR	PR	PR	M	M	M
60	PR	PR	PR	PR	PR	M	M	M	M	M
70	PR	PR	PR	M	M	M	M	M	M	M
80	PR	PR	M	M	M	M	M	M	M	M
90	M	M	M	M	M	M	M	M	M	M

(Source: *Visual Impacts of Partial Cutting*, 1997)

Visual Impact Assessment

Key Design Criteria:

- **Response to visual force lines**
- **Borrows from natural features**
- **Edge treatments**
- **Opening shape**
- **Tree retention**
- **Road and landing visibility**

The above are a few key design criteria discussed in the VIA Guidebook and Effectiveness Evaluation procedures and standards. The Ministry's *Visual Design Training Manual* and on-line training (http://www.for.gov.bc.ca/hfp/values/visual/index.htm) are recommended references as they deal with visual design in much more detail.

Visual Impact Assessment

Questions to ask when assessing a simulation.

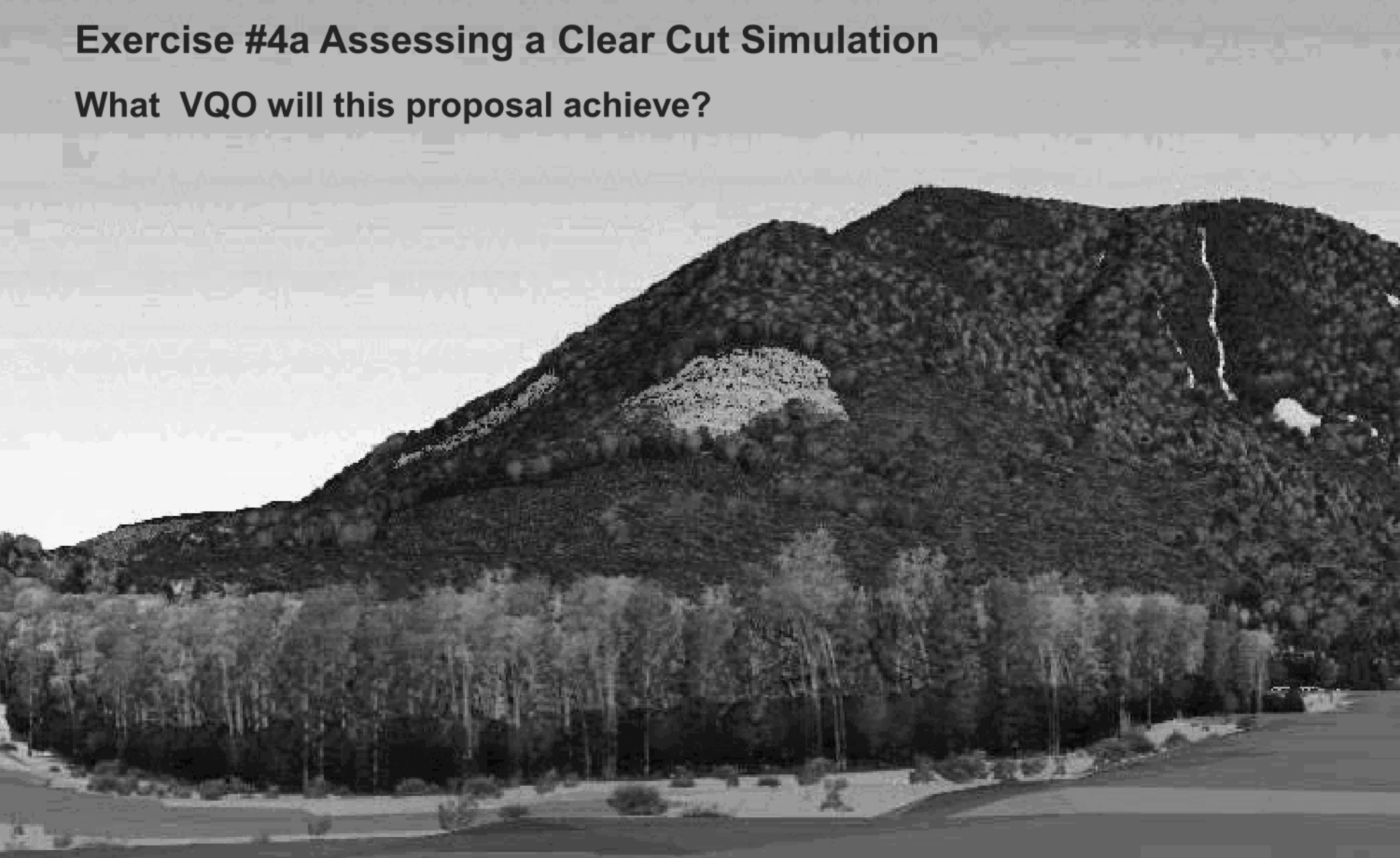
Basic definition:
Does a proposed operation meet the category of alteration (VQO) definition?

Visual design:
Does a proposed operation exhibit elements of good visual design?

Numerical assessment:
In perspective view, what proportions of the landform or unit are represented by existing non-visually effective green-up alterations and a proposed operation? What percent volume or stems will be left in the block?

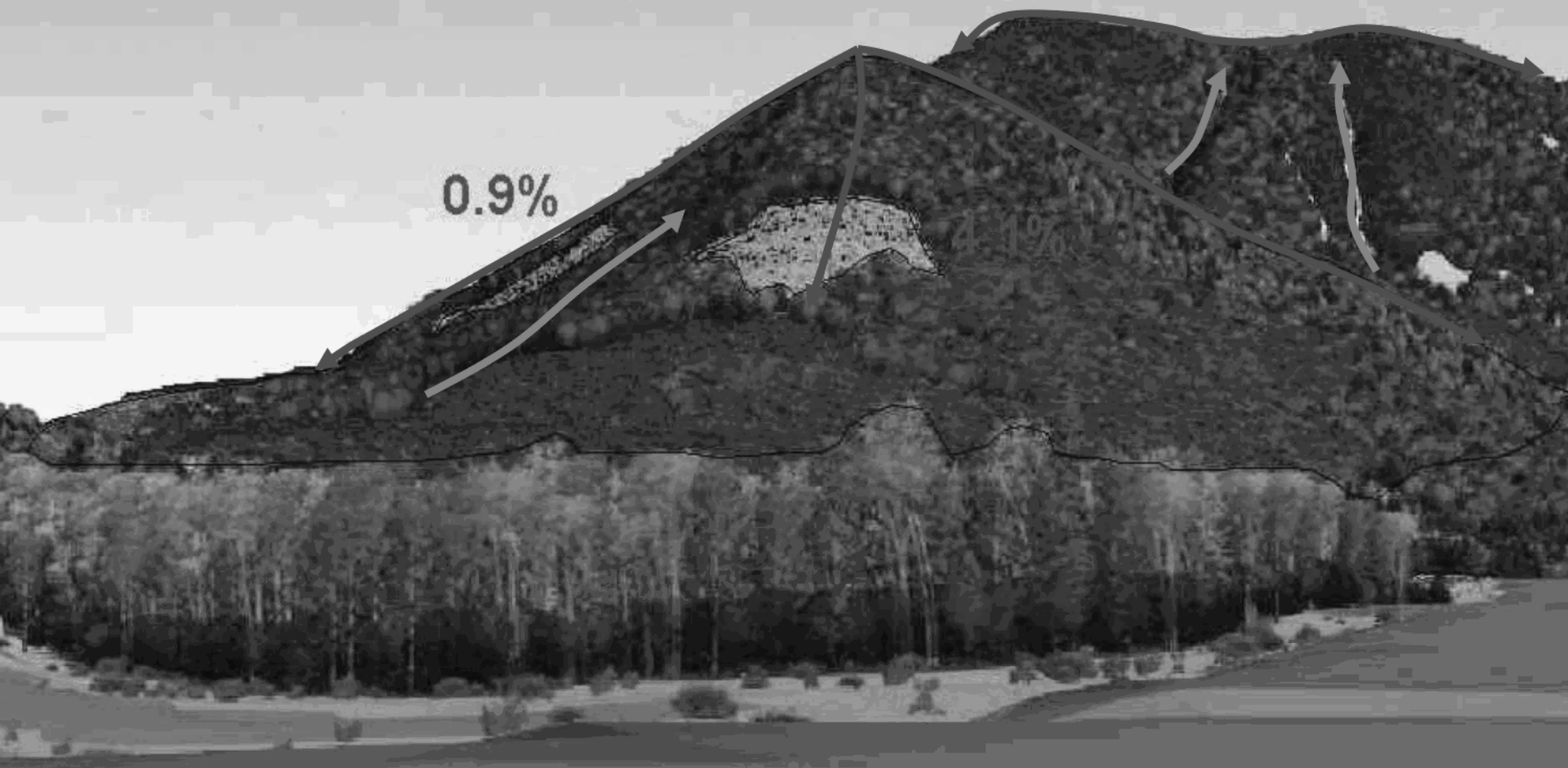
Exercise #4a Assessing a Clear Cut Simulation

What VQO will this proposal achieve?

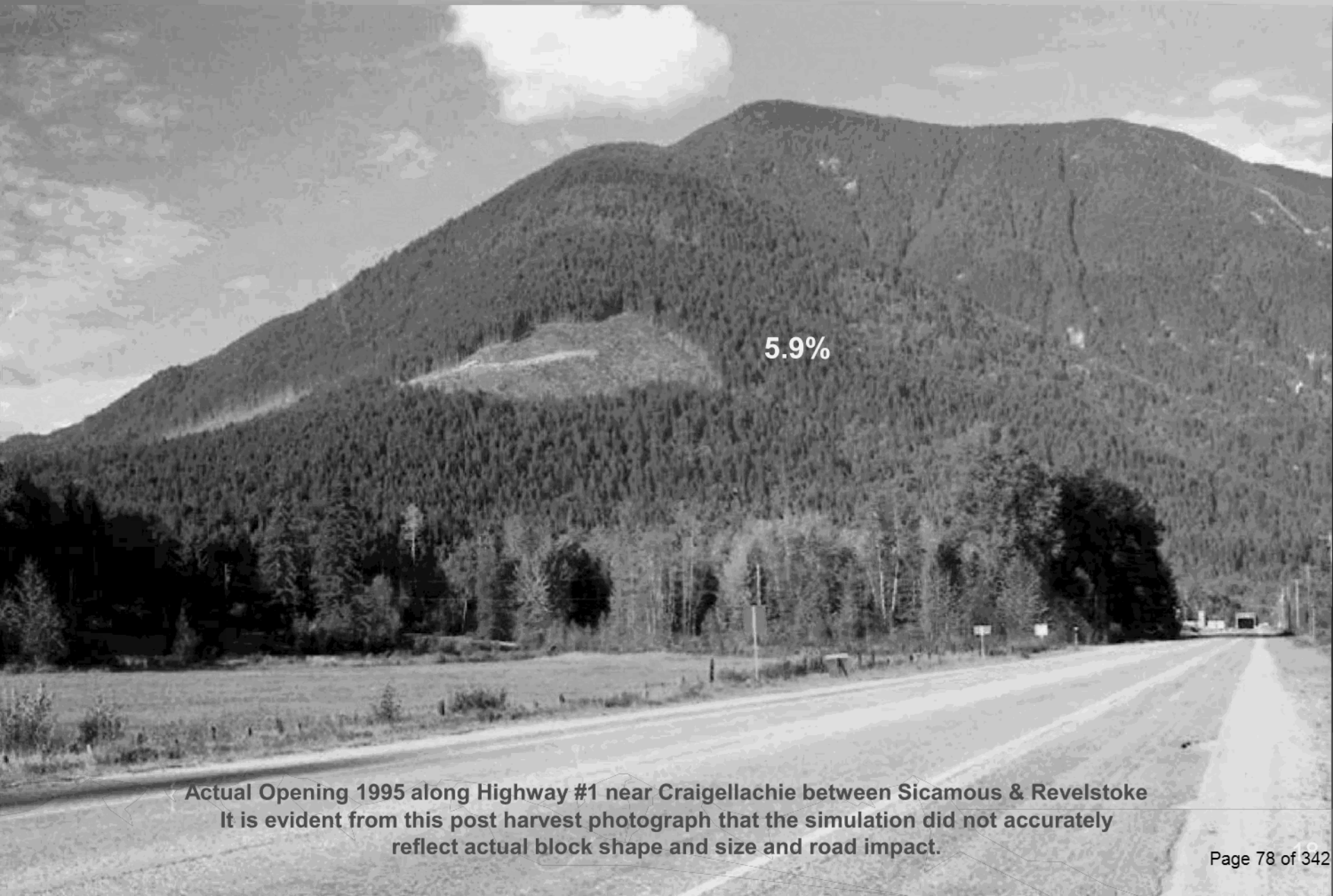


1. Define landform unit for analysis purposes.
2. Conduct ocular assessment using definitions.
3. Evaluate design.
4. Conduct numerical assessment.

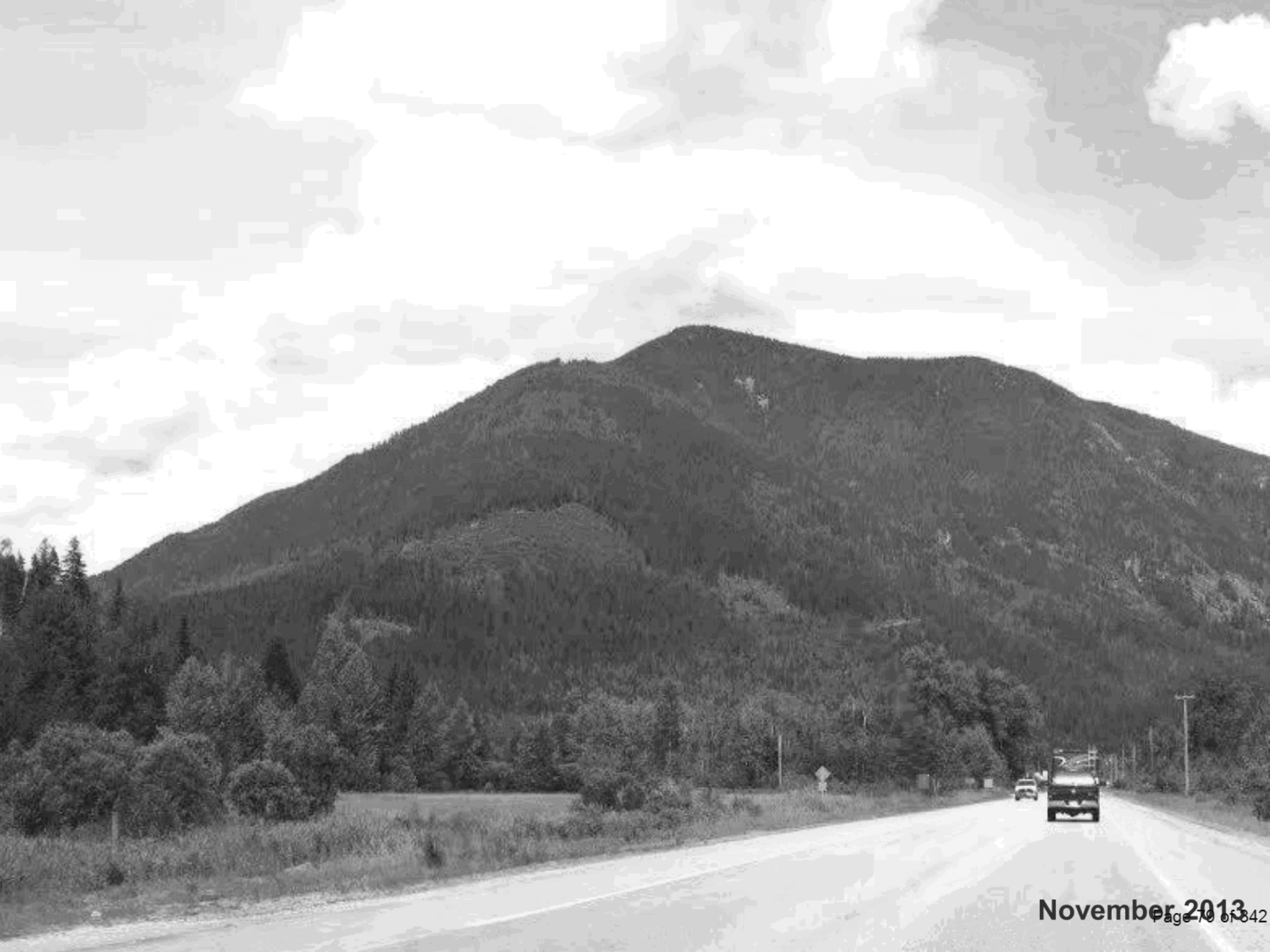
Results?



1. Ocular assessment = Modification
2. Numerical Assessment = 5% PR
3. Design = Poor (Block mid-slope, on center of ridge, focal point, slightly angular in shape. and conflicts with lines of force)



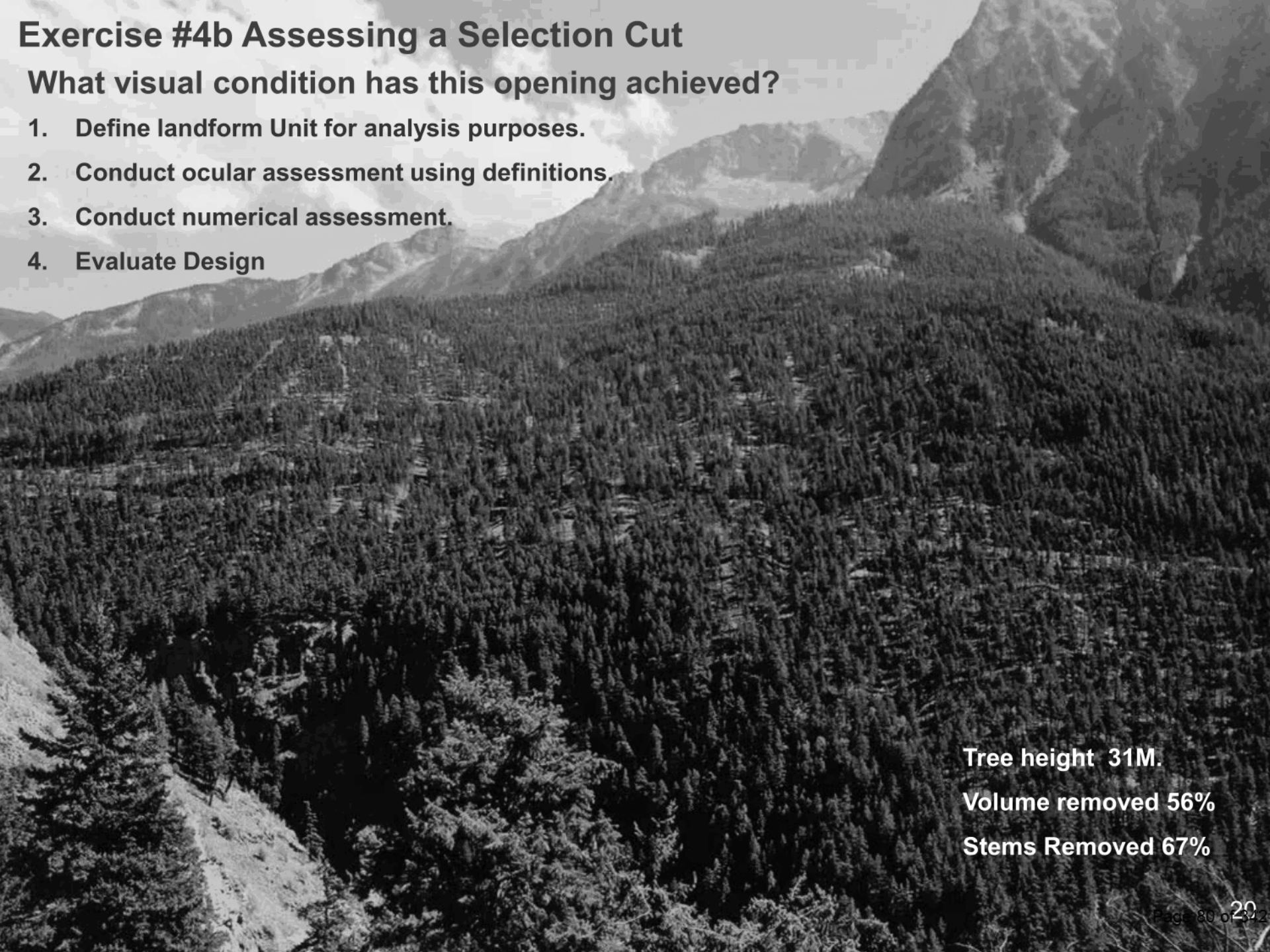
Actual Opening 1995 along Highway #1 near Craigellachie between Sicamous & Revelstoke
It is evident from this post harvest photograph that the simulation did not accurately reflect actual block shape and size and road impact.



Exercise #4b Assessing a Selection Cut

What visual condition has this opening achieved?

1. Define landform Unit for analysis purposes.
2. Conduct ocular assessment using definitions.
3. Conduct numerical assessment.
4. Evaluate Design



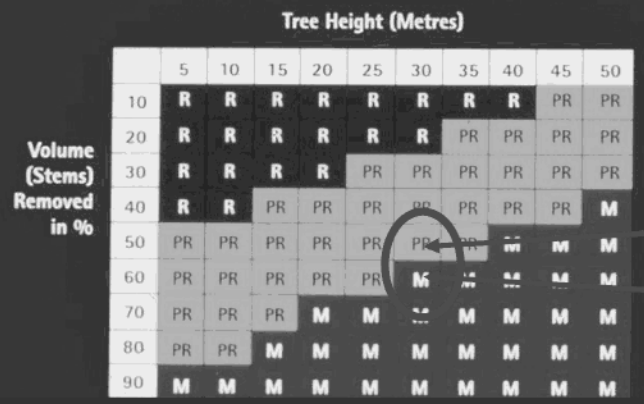
Tree height 31M.

Volume removed 56%

Stems Removed 67%

What VQO has this opening achieved?

1. Ocular assessment = PR
2. Numerical Assessment = PR



3. Design = Moderate. (organic shape, even distribution of leave trees, some response to LoF) Yarding Corridors visible.

Tree height 31M.

Volume removed 56%

Stems Removed 67%

Day One - Exercise #1-3

Below are two different FSP Result/Strategy Statements
Read them over discuss them with your neighbour and make a few notes regarding the merits/issues of each relative to the (measurable verifiable) approval test.

1. Result/Strategy:

Road construction and/or timber harvesting carried out or authorized by the holder(s) of the FSP within scenic areas established on December 4, 2005 within the Campbell River Forest District, will be consistent with:

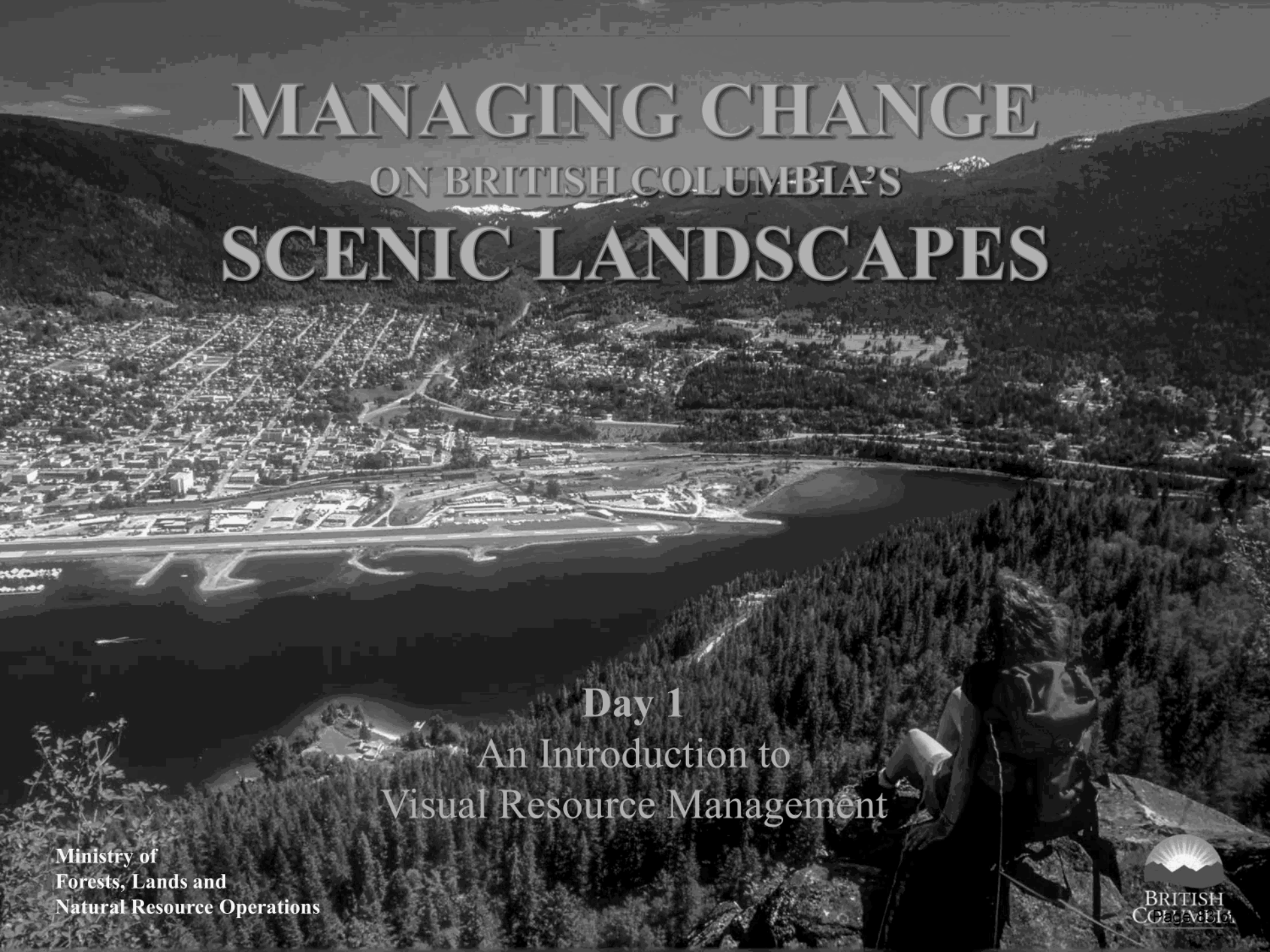
a) The visual quality objectives established by the District Manager on December 14, 2005; and

b) The categories of visually altered forest landscape as defined in FPPR s.1.1.

2. Result/Strategy:

For areas within the HWY 200 scenic areas that are identified with a Visual Quality Objective of Preservation, Retention or Partial Retention, conduct a visual impact assessment. The visual assessment will determine the percent alteration on a perspective basis and will also consider the shape of the block on the hillside.
Visual modification on a perspective scale will be within the limits prescribed in the VIA Guidebook, unless there is explicit indication in the site plan that the limit will be exceeded and a rationale.

Results of Strategy – Percent alteration figures.


MANAGING CHANGE
ON BRITISH COLUMBIA'S
SCENIC LANDSCAPES
Day 1
An Introduction to
Visual Resource Management
Ministry of
Forests, Lands and
Natural Resource Operations
BRITISH
COLUMBIA

Your Instructors are:

Jacques Marc, RFT
Consulting Technologist
VRM Services
jmarc@shaw.ca

Reter Rennie, RPF
Consulting Forester
Kamloops
Peter.Rennie@gov.bc.ca

Cam Campbell, P. Ag. BCSLA
Principal
Campbell-Jarvis Consulting
dccampbe@telus.net

Peter Williams, BCSLA
Visual Resource Management Officer
Forest Practices Branch
peter.williams@gov.bc.ca

Mike Larock, RPF
Director Professional Practice &
Forest Stewardship
mlarock@abcfp.ca

Workshop Objectives:

To gain an appreciation of:

- How Visual Resources are being Managed under FRPA in British Columbia.
- Visual design principles and their application to the range of forest operations and activities which have a visual impact on the landscape.
- How visual issues might be integrated into the wider forest planning and design process. (Integrated Visual Design).

Why do we manage Visual Quality in BC?

- Scenic landscapes are highly valued.
- Unaltered landscapes are preferred.
- Scenic landscapes provide BC's Tourism Industry with a competitive edge.
- Well designed landscapes provide the public with confidence that our forests are being managed.
- Approved HLP's have made commitments regarding Visual Resources.
- Visual Quality is one of 11 core values to be managed and protected under FRPA.

How do we Manage for Visual Quality in BC?

1. Conduct research to determine Public Preferences.
2. Carry out Visual Landscape Inventory to identify the visible landscape and rate its sensitivity to human made alteration.
3. Establish Visual Quality Objectives to define the level of alteration that would be acceptable on the landscape.
4. Incorporate VQOs into TSR analyses to determine impact on Timber Supply.
5. Prepare Results/Strategies in FSP's that will ensure operations are consistent with established VQOs.
6. Conduct inspections to ensure that R/S are carried out and objectives are achieved.
7. Carry out Effectiveness Evaluations to determine trends in visual quality management .
8. Provide guidance, training, and extension to DDMs and practitioners, and advice to policy and legislation-makers.

BRITISH COLUMBIA

Visual Approaches

Ecological Model

- Assumes that the intrinsic beauty of a landscape will be protected by managing the ecology.

  If you get the ecology right you get the aesthetics right.
- Expert based with no public involvement.

Aesthetic Model

- Assumes that the scenic value of a landscape can be determined by assessing the basic elements (landforms, water, soil & vegetation) of the landscape.
- Expert based with no public involvement.

Psychophysical Model

- Examines public preferences, relative to physical features seen in the landscape.
- Provides an objective method of measuring and predicting the scenic beauty of landscapes
- Public input used to influence management of the land.

Visual Approaches

Phenomenological Model

- Focuses on individual/personal experiences and feelings.
- Examines "Spirit of Place" the ephemeral and environmental conditions around aesthetics.
- Often applied to Urban environments, as a way to learn how people feel about public spaces

Psychological Model

- Examines what types of landscapes are preferred using public preference studies.
- Has the potential to be quite accurate as it uses public preferences to produce scaled numeric values to access landscapes.
- Not easily translated to land management policies or to physical landscape features.

MFLNRO Approach

- Broadly Based on the USFS Visual Management System introduced in 1973.
- Uses 5 Visual Quality Classes to define levels of alteration on the landscape.
- Combination Aesthetic and Psychophysical approach.
- Expert based assessments, guided and calibrated using public perception surveys.

Exercise #1-1

What is a Landscape?

Why are Landscapes Important?

What is a Landscape?

Webster's Dictionary definition:

- **a picture representing a view of natural inland scenery.**
- **the landforms of a region in aggregate.**
- **a portion of territory that can be viewed at one time from one place.**

This definition suggests that the landscape is more than an area of land, but is also what we see.

What is a Landscape?

The Modern View of a Landscape is that it is more than a visual resource. Rather landscapes are made up of three distinct elements:

- **Natural Resources:** Landforms, rocks, vegetation, water, & wildlife, which make up the land and ecosystems.
- **Human Influences:** the management and alteration of vegetation and landforms and the creation of buildings and structures.
- **Aesthetic Qualities:** concerned with the reaction of the mind to what the eye sees.

We each see the landscape from our own unique perspective, based on emotions, education, culture and experiences.

Why are Landscapes Important?

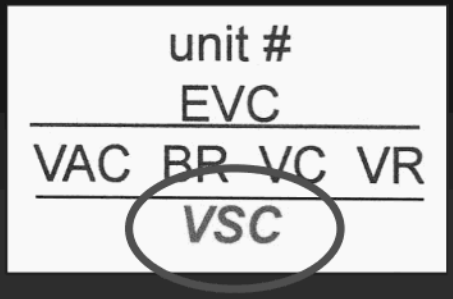
- We live in it.
- We use/exploit it.
- It affects our emotions.
- A place to escape from daily stresses.
- Provides necessities for life.

Visual Landscape Analysis

"Moving Beyond Inventory"

Visual Landscape Analysis

As we learned in the last session a VSC is an inventory attribute which provides an indication of a VSU's sensitivity to visual alteration.



Often, District Managers and planning processes require some level of advice in terms of how to manage the Landscape given its identified visual sensitivity.

This advice is often developed at the time an inventory is completed and takes the form of a Recommended Visual Quality Class (RVQC).

Visual Landscape Analysis

What is a Recommended Visual Quality Class (RVQC)?

It is a specialist's recommendation that describes the level of alteration that would be appropriate for a visual sensitivity unit considering visual and other resource values.

It is articulated using the same terminology as VQOs.

Note: It must be understood that a RVQC does not comprehensively consider all socio-economic factors, is not determined through a planning or decision making process and is not necessarily endorsed by government or other stakeholders

Visual Landscape Analysis

A RVQC is proposed by a VLI specialist or contractor based on professional judgement, public input derived during the inventory process and guided by long-standing experience.

The specialist is not without guidance when making their recommendation. The 1997 Benskin Memo provides default RVQC choices for specialists relative to the VSC.

VSC	RVQC
1	P-R
2	R-PR
3	PR-M
4	PR-M-MM
5	M-MM

Visual Landscape Analysis

- The principle correlation between RVQC's and VSCs is that in general the higher the visual sensitivity class the more restrictive the rVQC that may be prescribed.
- This being said there is not direct translation, i.e., a Visual Sensitivity Class 1 does not automatically equate to a Visual Quality Class of Preservation or Retention.
- Recommended VQC's are stored digitally as an administrative attribute within the VLI data base.

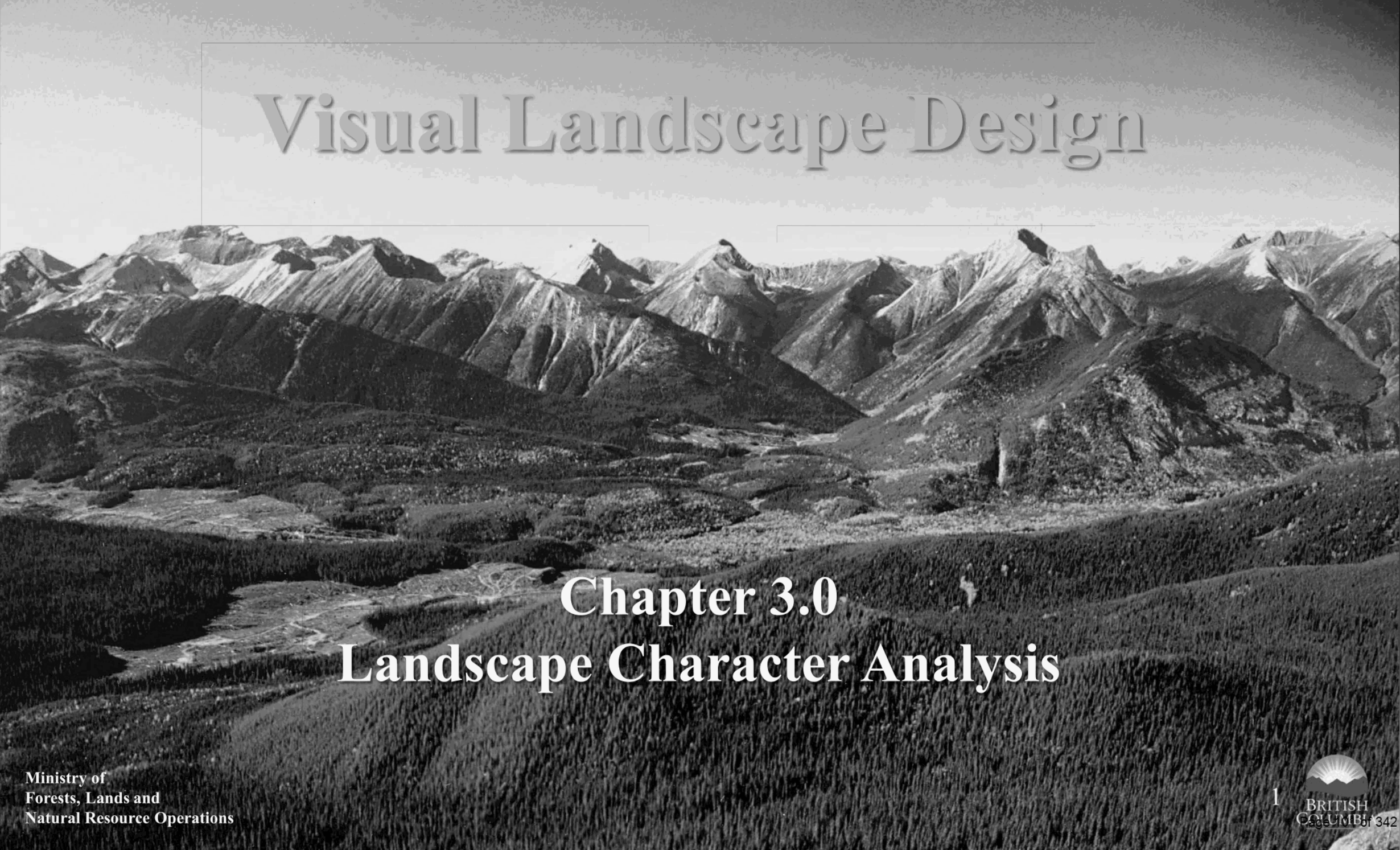
What becomes of the RVQC?

The RVQC resides in the Inventory data base until such time as there is a need for it.

It is often adopted as the starting point for discussion by District Managers, when negotiating an Established VQO under the Government Action Regulation.

It has also been used as the basis for Land Act Orders.

Visual Landscape Design



Chapter 3.0
Landscape Character Analysis

Ministry of
Forests, Lands and
Natural Resource Operations

BRITISH COLUMBIA

Landscape Character Analysis

Landform Analysis

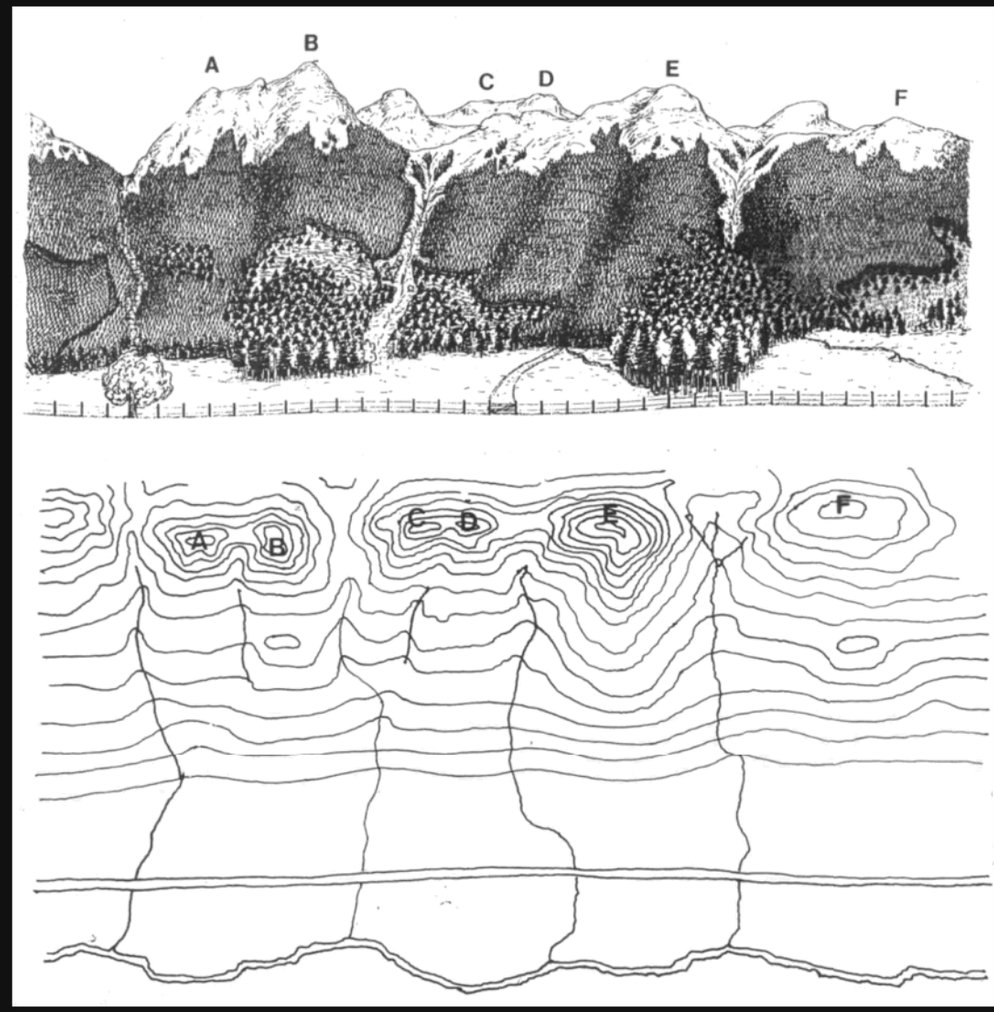
The lines of force concept is based on the premise that as we observe the landscape, our eyes are drawn up hollows and down ridges.

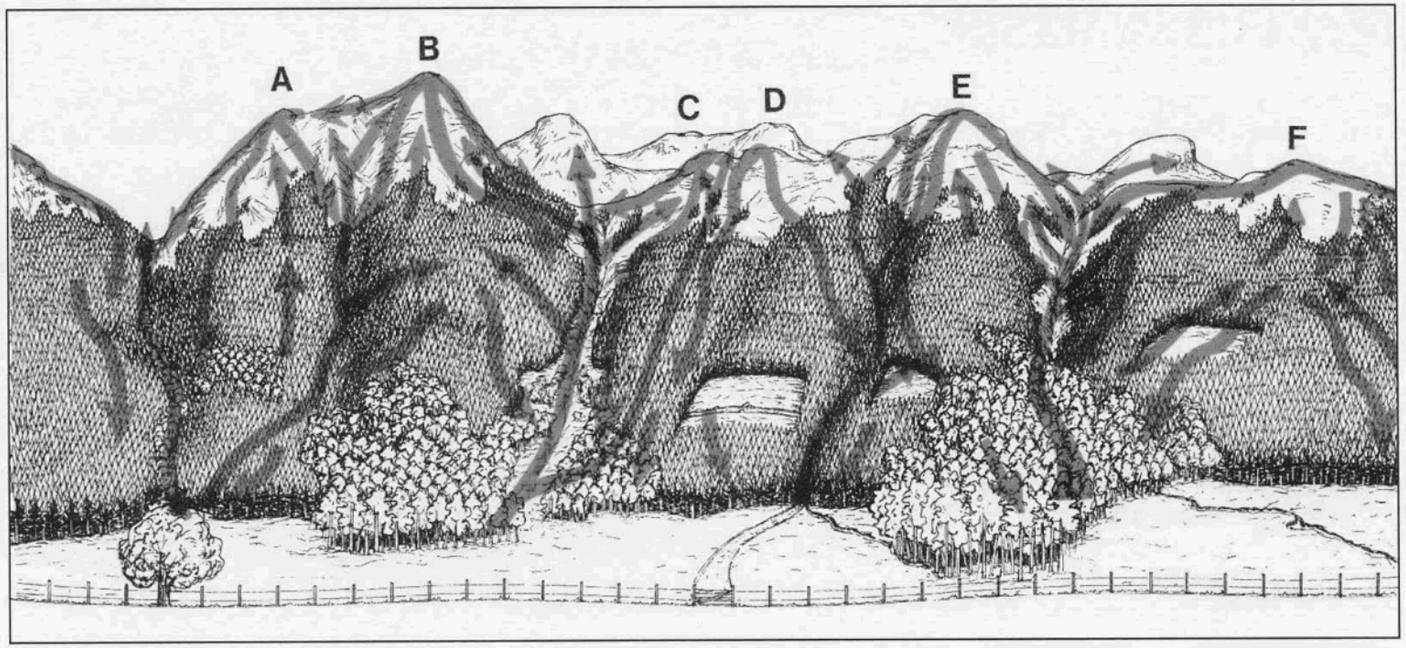
Landform Analysis

Learning how to map and use visual force analyses is an important design concept to learn and understand as it is used as the basis for developing cut block shapes that are more compatible with the natural landscape.

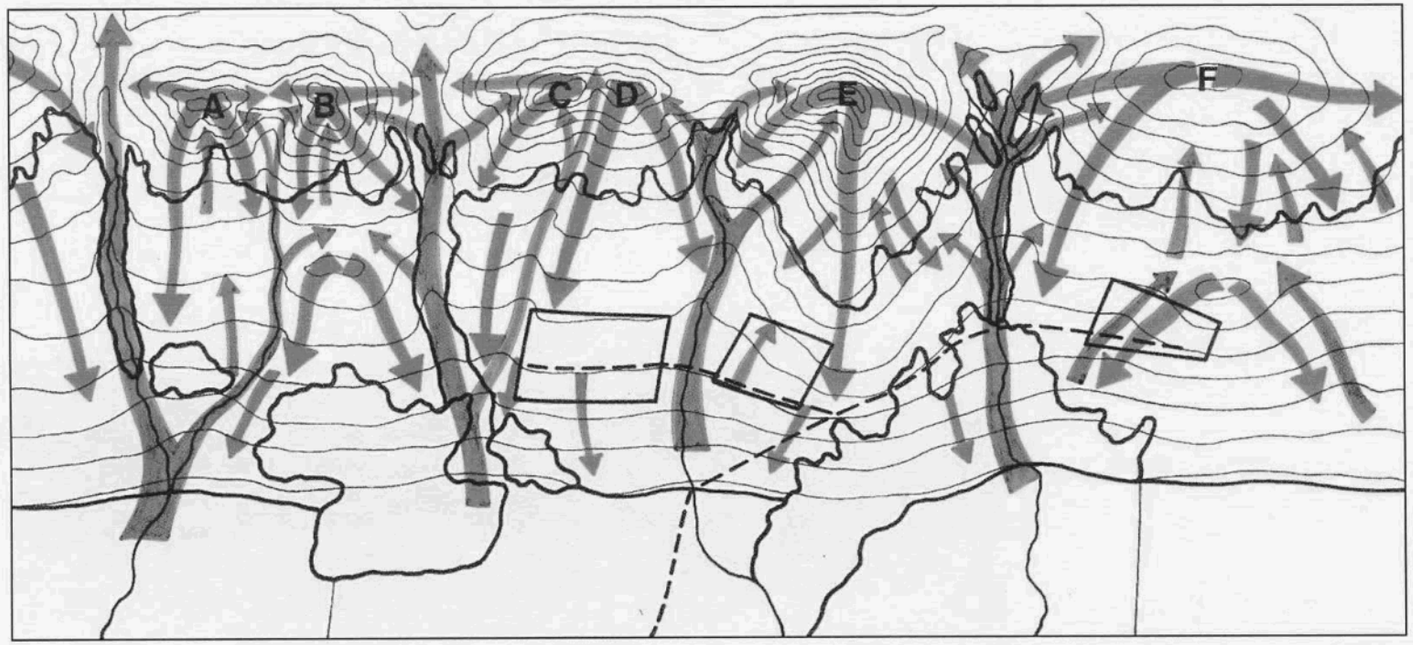
Starting on the photo map out either the convexities (ridges) or the concavities (hollows). It is easier to start with ridges first then do hollows. Identify the strongest ridges or hollows first. The standard convention is to use RED down arrows to identify the RIDGES and GREEN arrows to identify GULLIES.

.





A landform analysis in perspective view.



The same analysis on a plan view of the landscape.

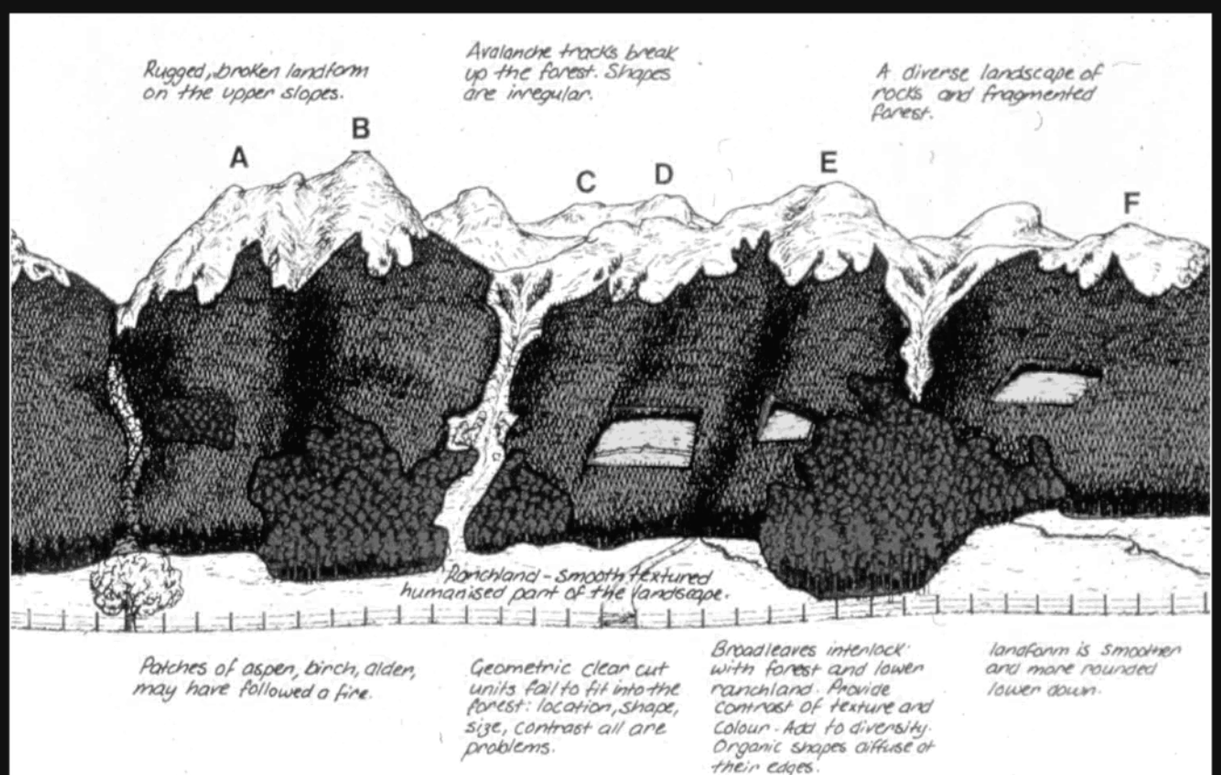
Exercise #2-4 Landform Analysis

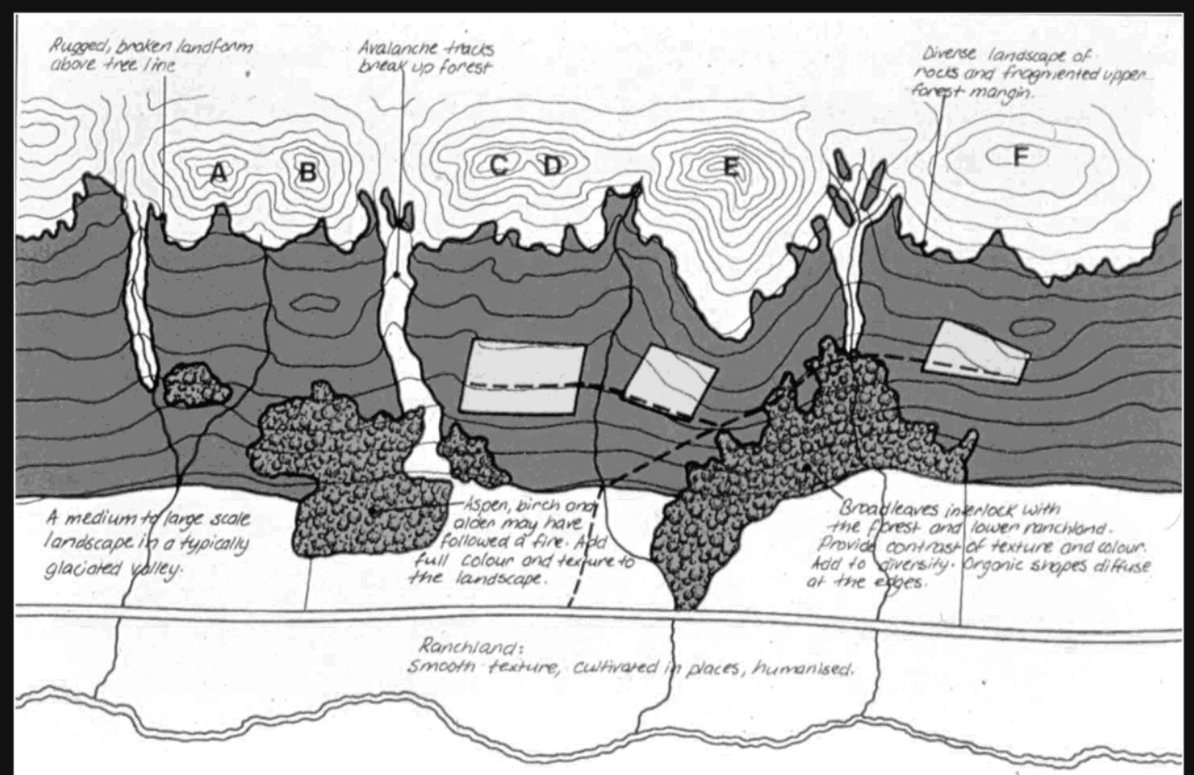
Land Feature Analysis

PURPOSE:

- To identify the locations of natural and human made features and patterns which will aid in design.
- Builds upon the Visual Landscape Inventory by more fully describing the landscape.
- Provides reasoning behind design.
- Identifies constraints and opportunities.
- Identifies natural patterns in the landscape which can be used to guide design.
- Identifies where current design is a problem.

Land Feature Analysis





Exercise #2-5 Land Feature Analysis

Midway

4.1 Design of Harvesting Units Perspective View

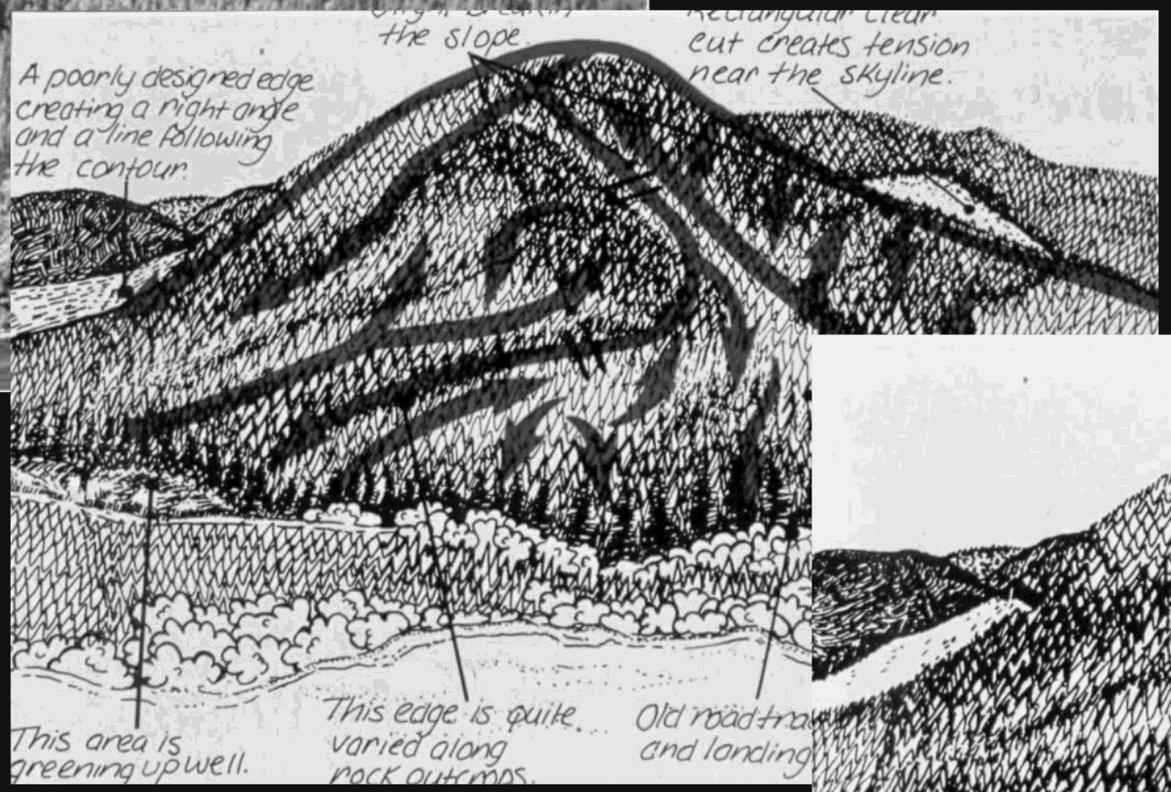
Carry out landform and land feature analysis.

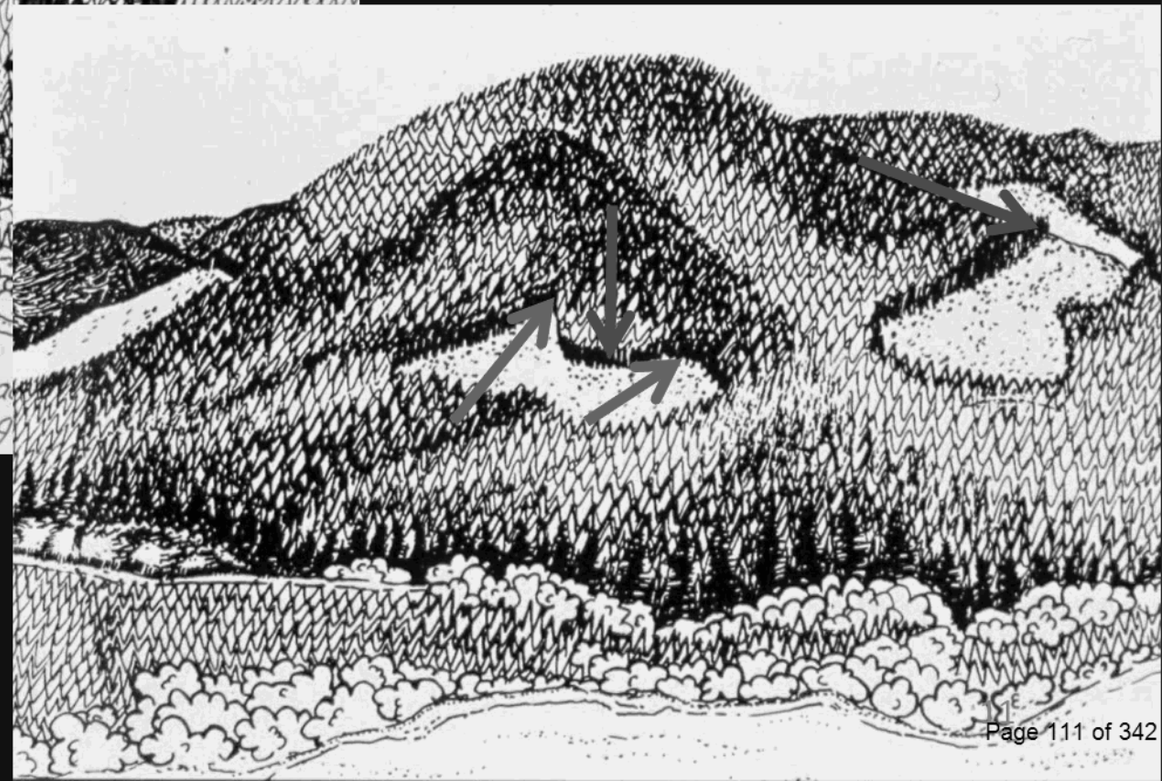
Design the entire landscape unit where possible, to ensure future development options are not compromised.

When designing blocks:

- **Use lines of force to guide block design.**
- **Emulate natural opening shape and scale.**
- **Create asymetric rather than symetric shapes.**
- **Use curvilinear lines vs straight horizontal or vertical lines.**
- **Develop organic interlocking shapes rather than geometric shapes.**

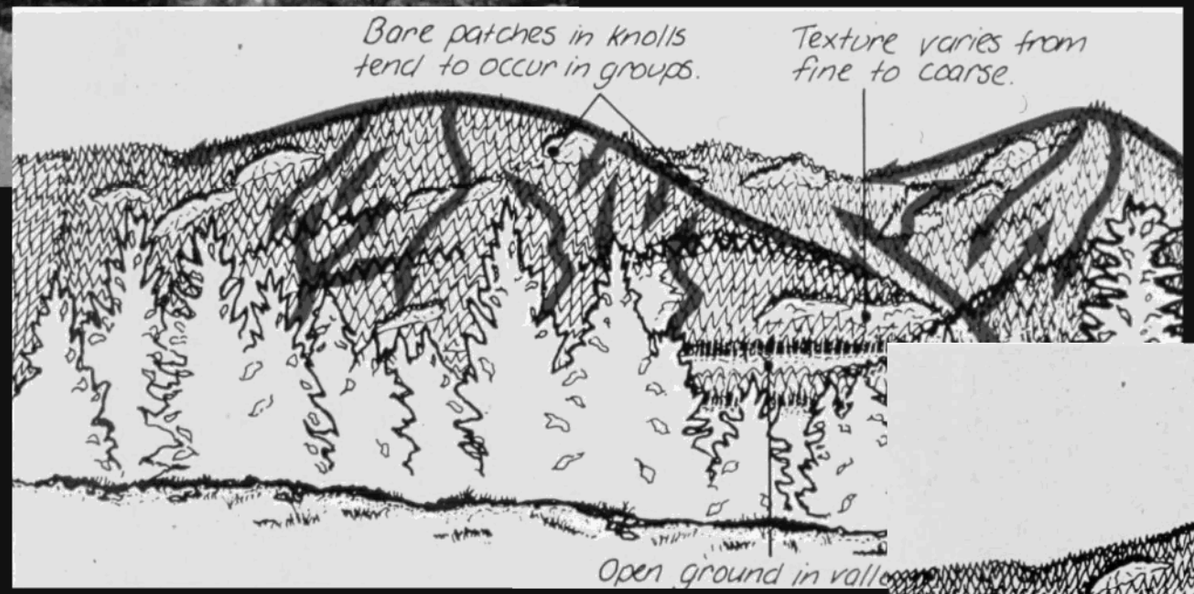
A landscape of rounded landforms.
Key creek draw in center to be protected.
Compatible shapes would be organic and curvilinear in appearance.

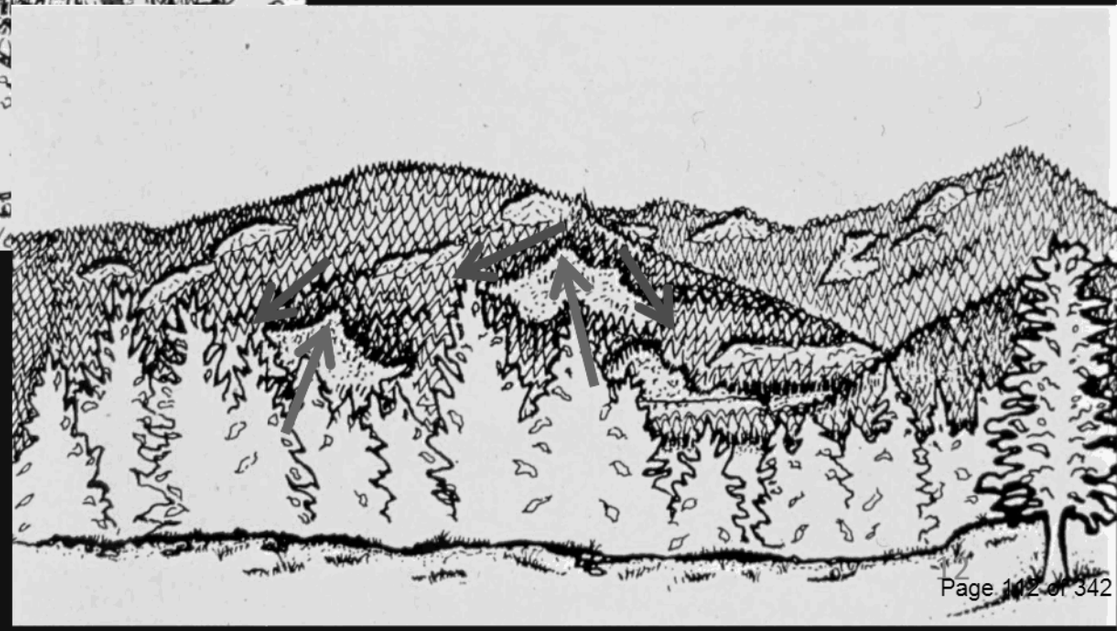




Two clear cuts are proposed asymmetrical in shape and size but responding to Lof.

A rounded landscape with many natural openings in the forest canopy providing textural variation and a moderate VAC.

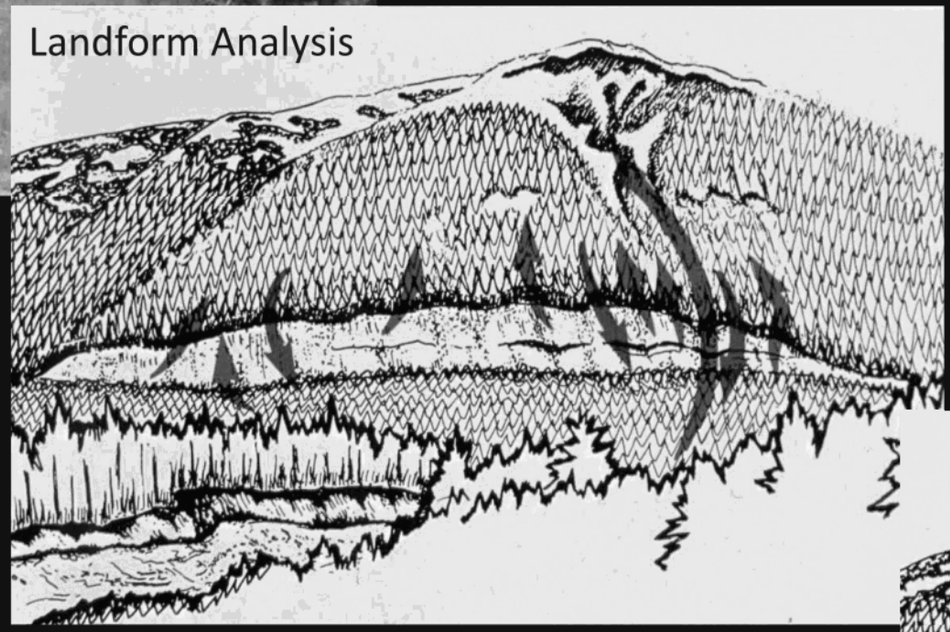




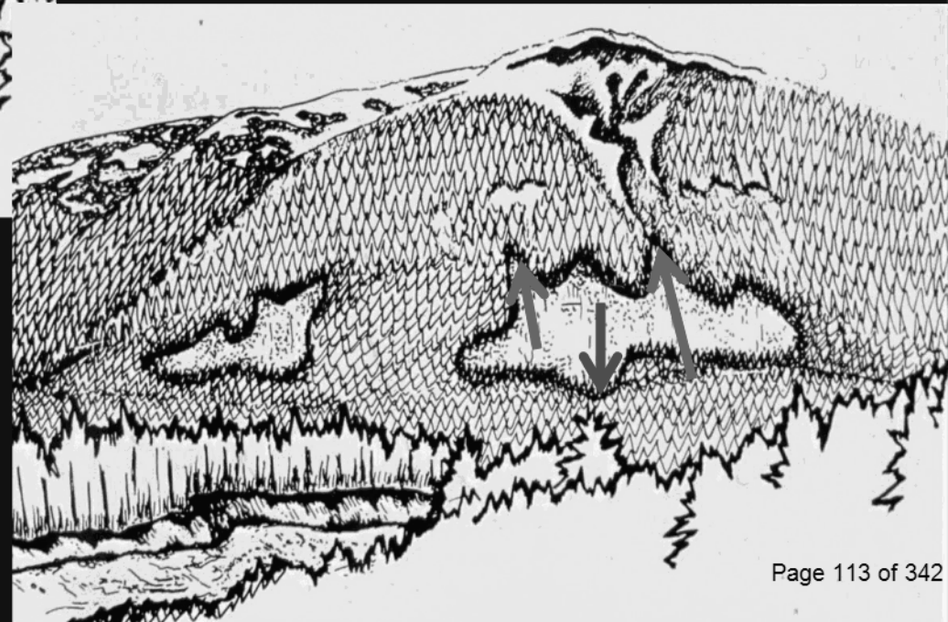
Harvest units are positioned in hollows, are curvilinear in shape and make use of interlock for a good fit.

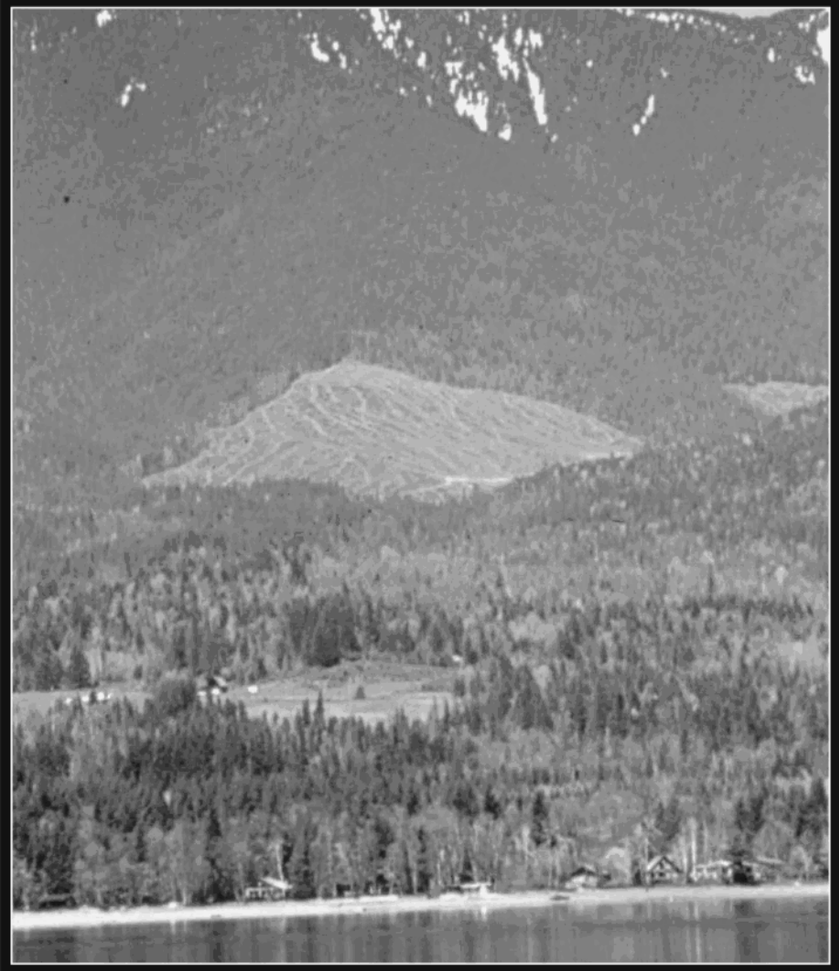
Retrospective character analyses can be used to determine what shapes would have have worked better in some landscapes.

A clear cut which is too large, angular and out of scale for the landscape.

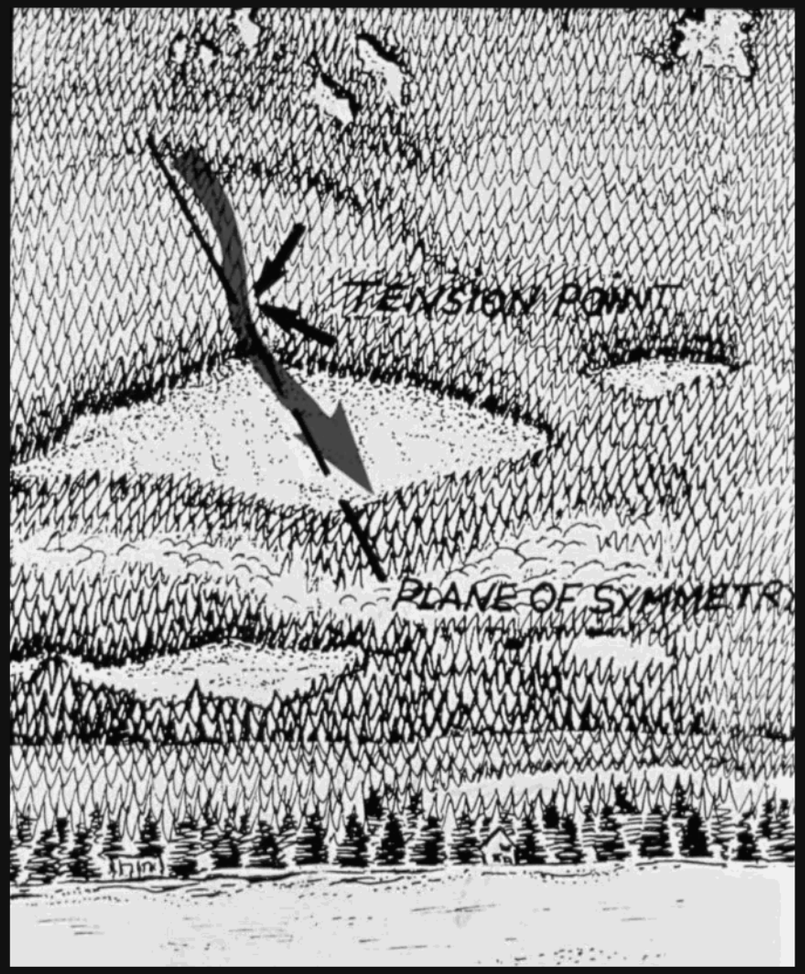


This solution suggests that two asymmetrically sized units may have worked better





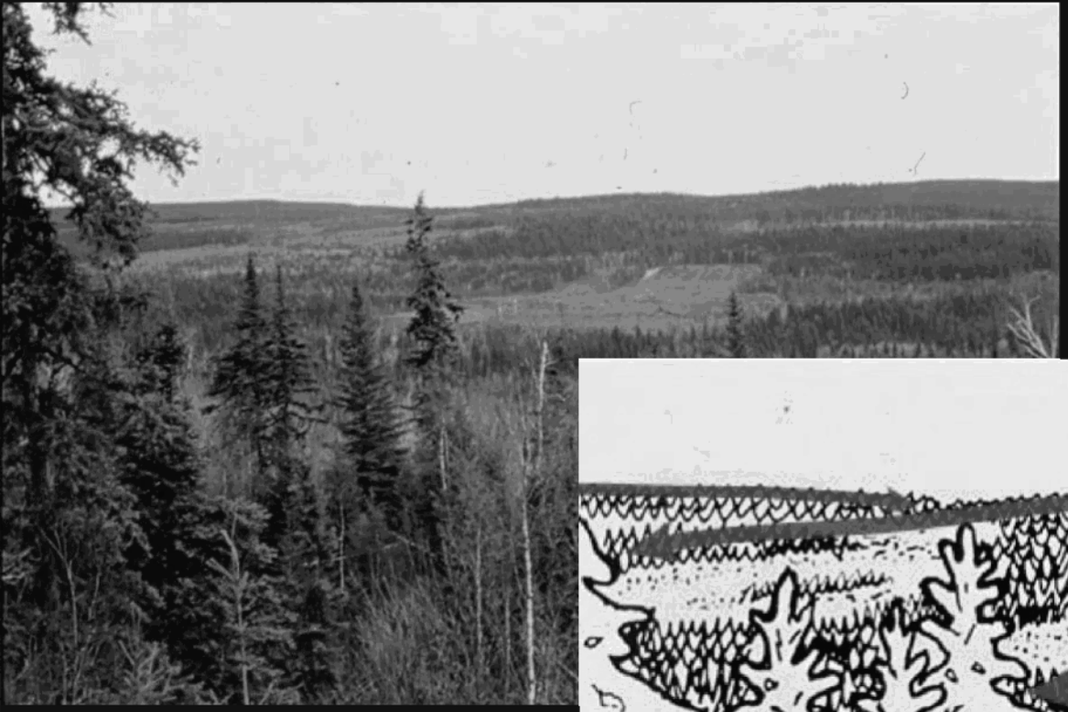
Here we have a strong convex Landform (Ridge) with an inappropriate shape contravening the LoF.



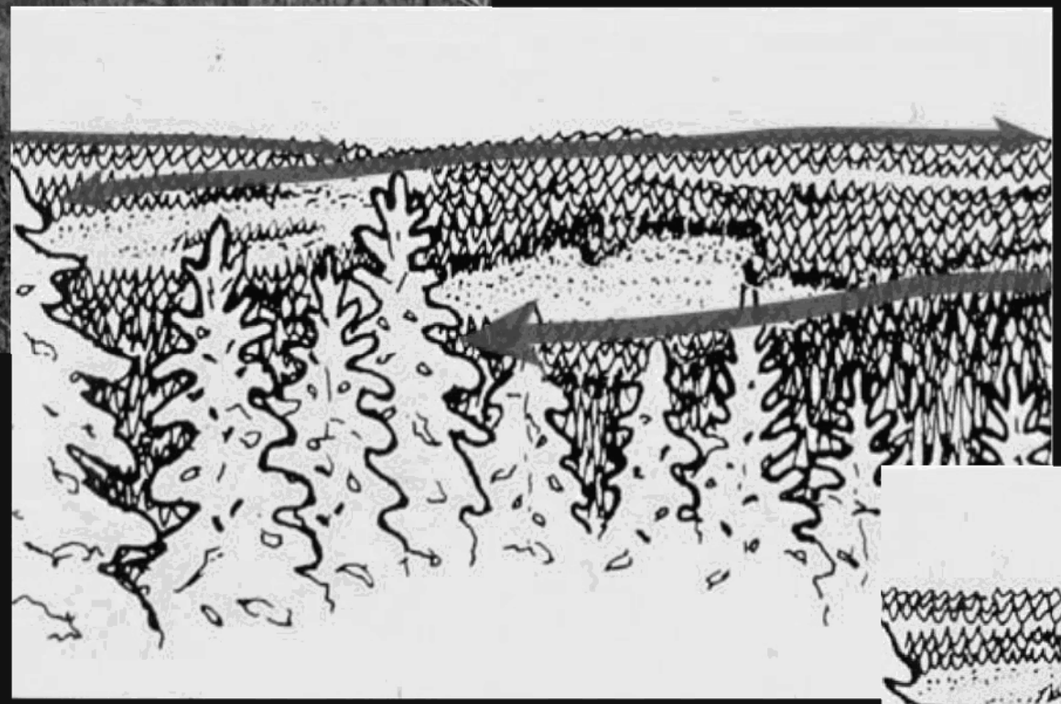
Land form Land Feature Analysis

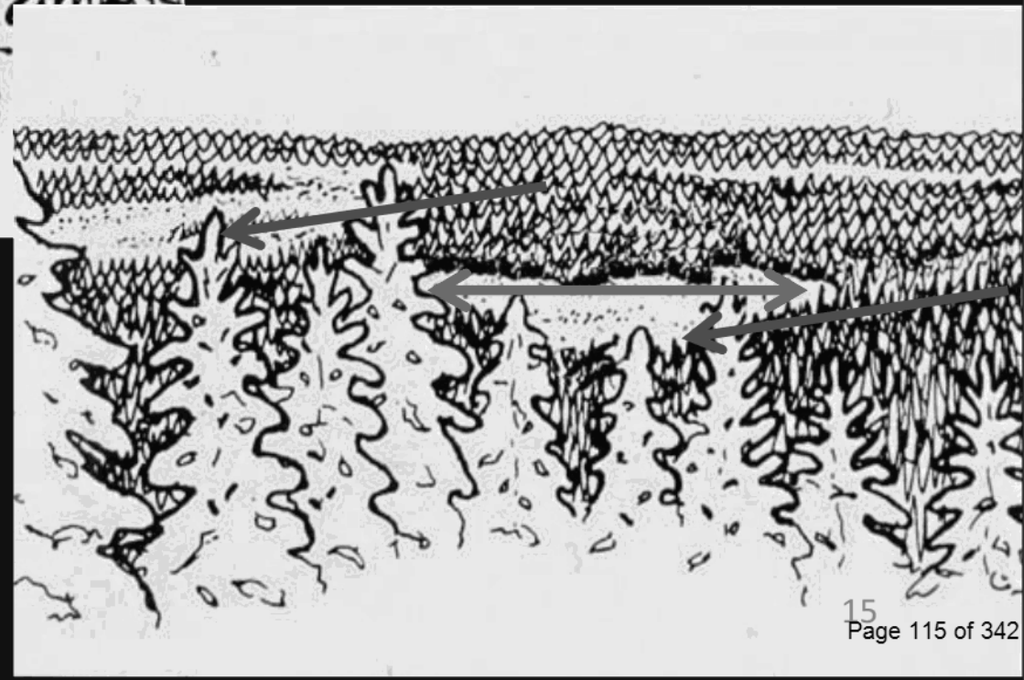
A better solution would have been a more curvilinear shape responding down on the strong ridge line.

Page 69 VLD



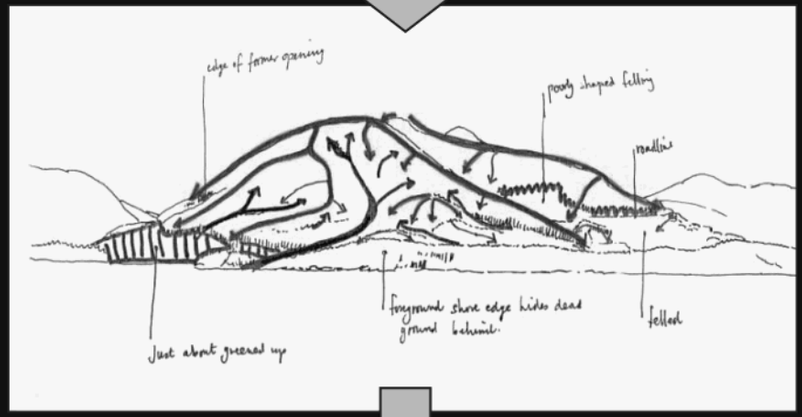
In the Cariboo the landscapes are flat and the LoF are more horizontal. The rectilinear block in the centre is blocky and a awkward fit in this landscape.

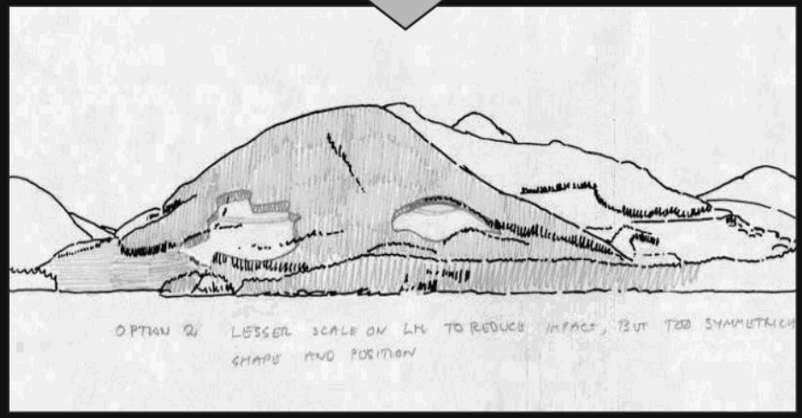


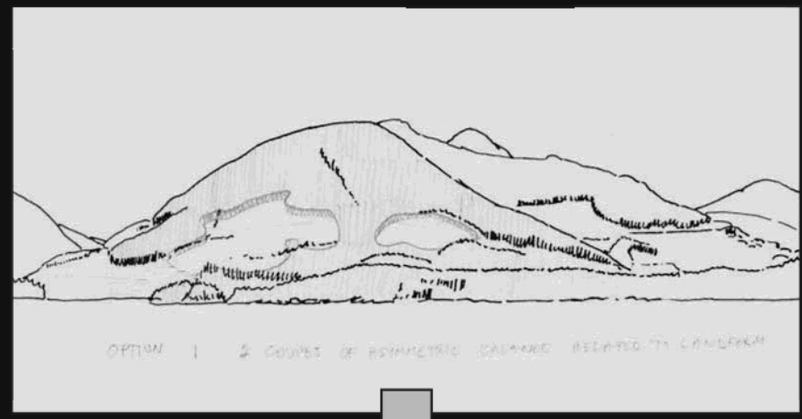


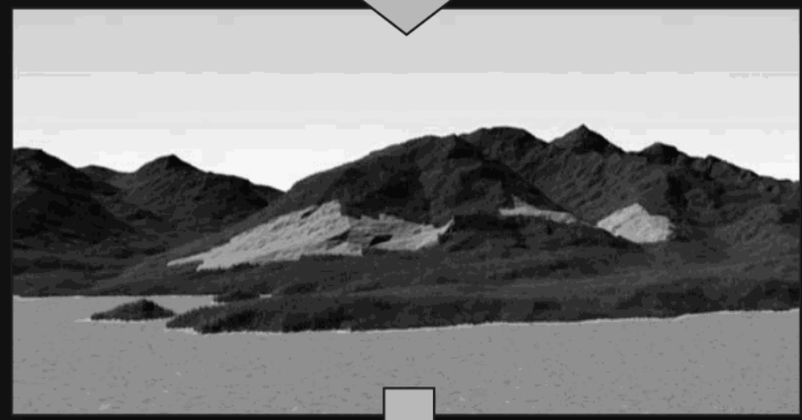
A lower relief block which pushes out in the direction of the LoF fits the landscape much better.

Marvinas Bay Case Study









Golden Rules of Design

- Use curvilinear lines over straight horizontal and vertical lines.
- Start low on the landscape and work upwards.
- Work from big scale to small scale.
- Shape more important than scale where public concern is not an issue.
- Use soft rounded shapes in rolling topography and spiky shapes in steep topography.
- Do not leave consistent intervals between blocks.
- Vary texture by introducing small blocks or through partial cutting.
- Use mapped lines of force to generate block shape(s).
- Make use of interlocking shapes to improve fit.
- Avoid contrasts in colour and shape. These create figure & ground issues.
- Protect Genius Loci.
- Asymmetric balance more comfortable than symmetry.

Exercise #2-6 Cut Block Design


Summer 1993


March 1994


May 1999

4.2 Design within Clear Cut Units

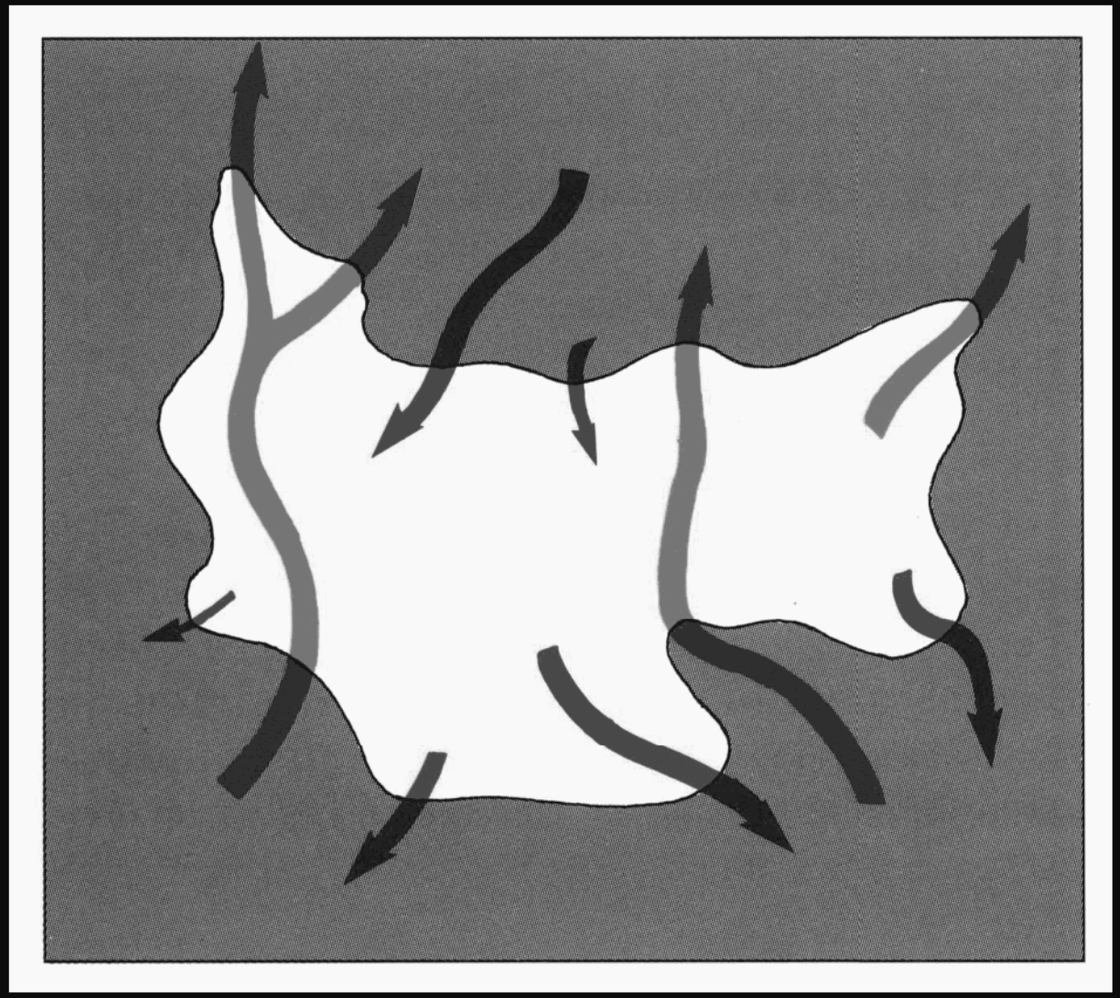
Treatment of Edges

This cut block stands out on a strongly textured landscape because of its crisp outline.

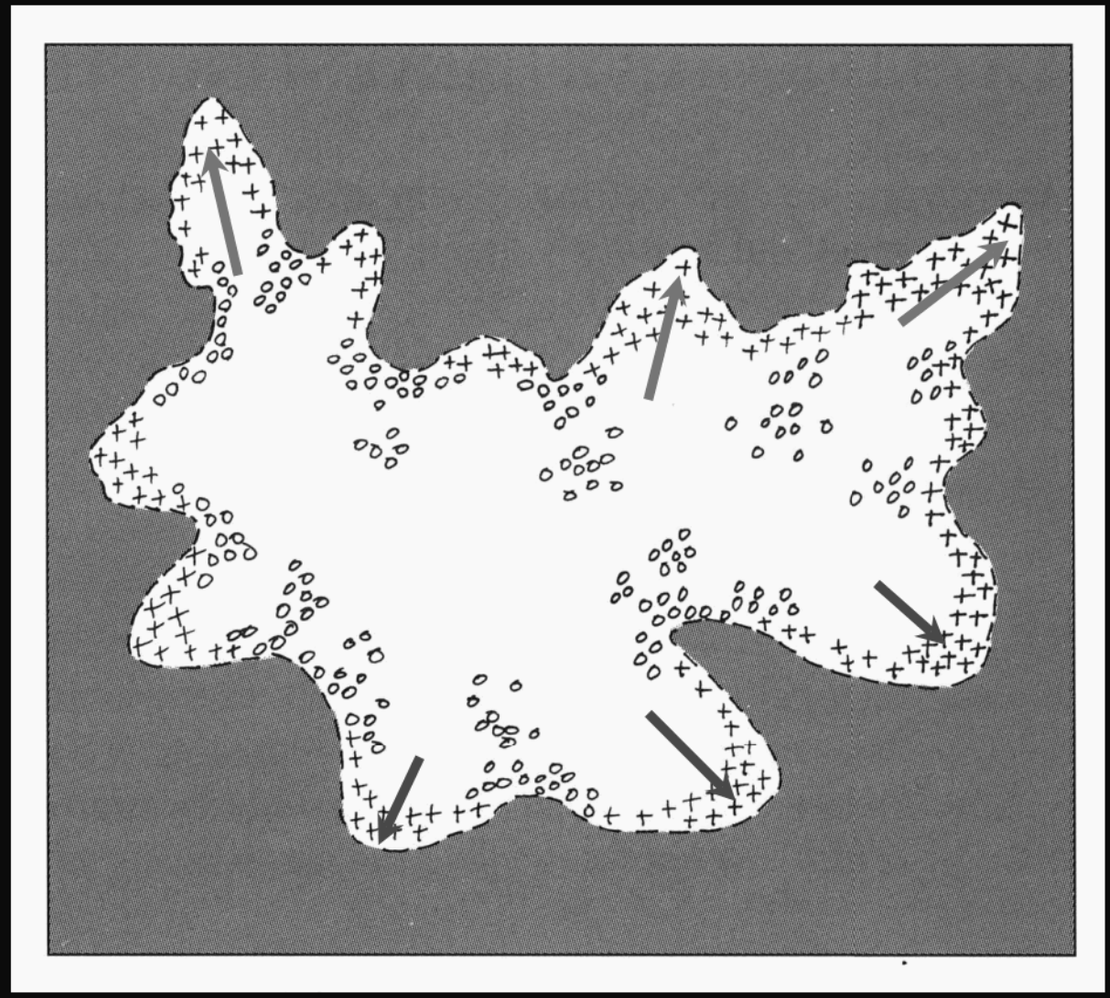
Moose Meadows, Smithers

This natural opening is characterized by an irregularly shaped boundary and tree retention.

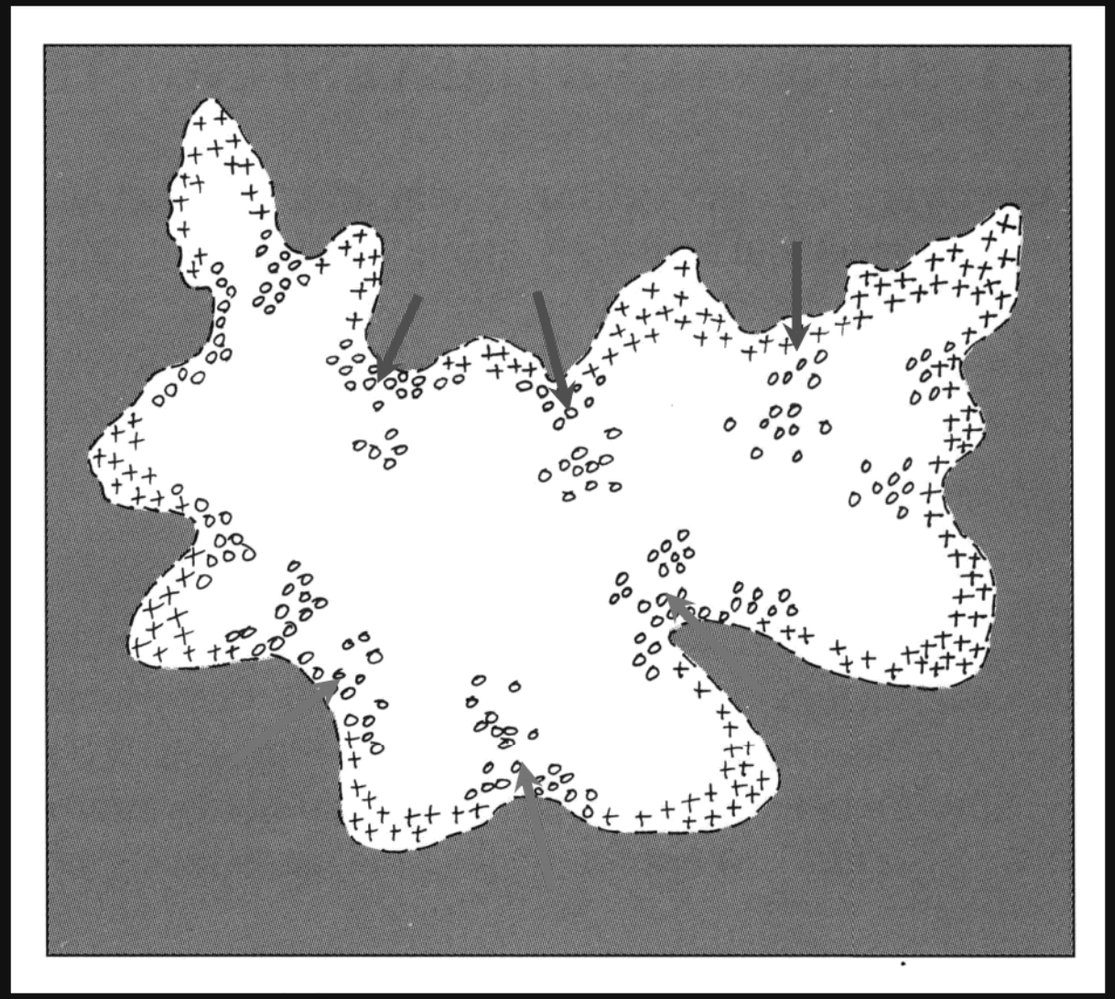
Page 72 VLD



The design of retained trees within a unit should respond to landform.



Thin where upper boundary rises in hollows and lower edges descend on ridges.



Leave more groups of trees where upper edge descends on ridges and lower edges rise in hollows.

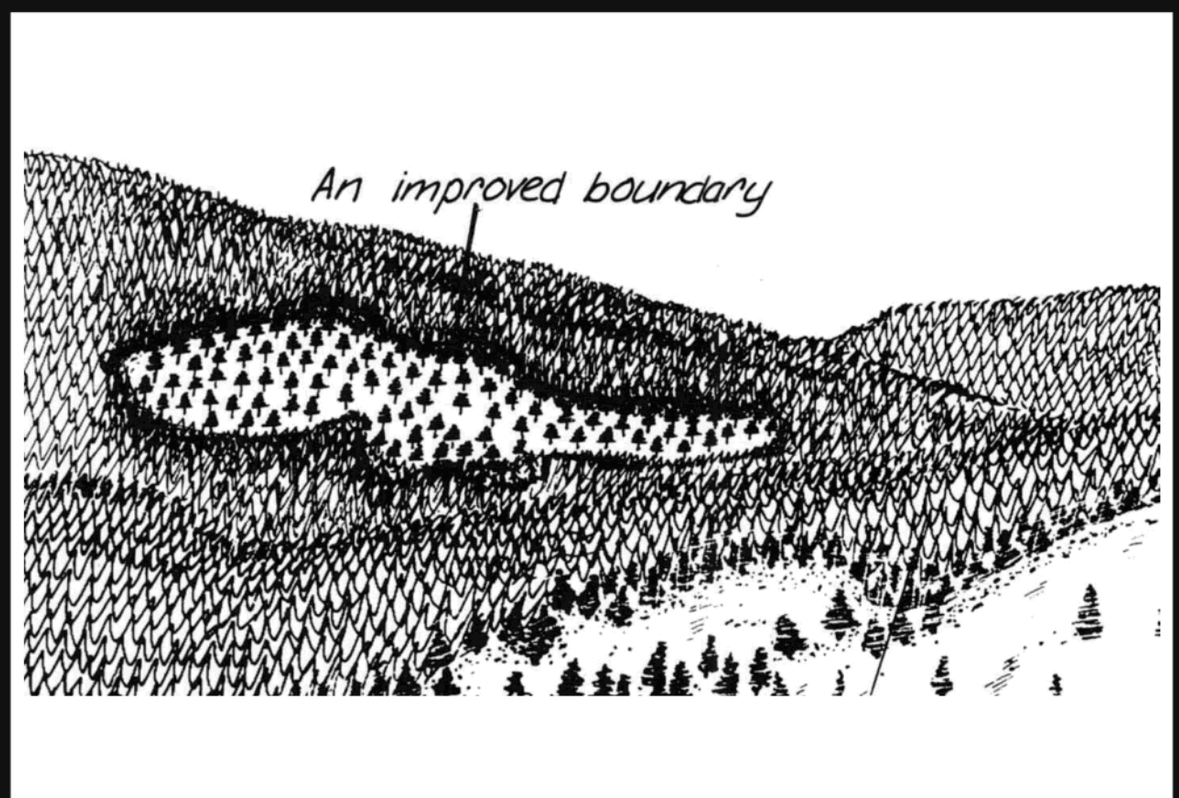
4.3 Alternative Harvesting Systems

Selective harvest close to the skyline. This works as sufficient trees have been left to maintain the skyline.

Yarding corridors facing viewer draw attention to this selection cut opening because of their 90 degree orientation and contrasting snow.

Partial Cutting

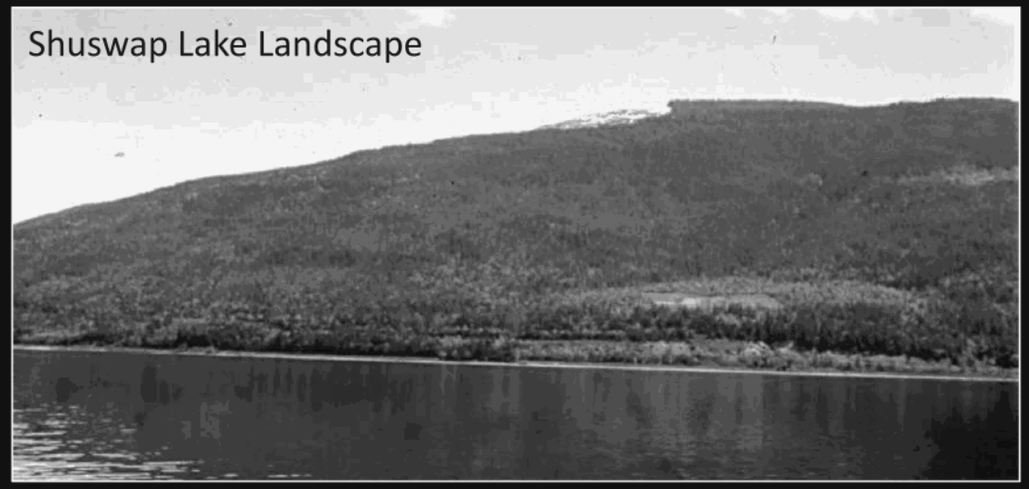
Here we have a large partial cut in which the shape stands out because the density has been reduced and the boundaries are geometric.



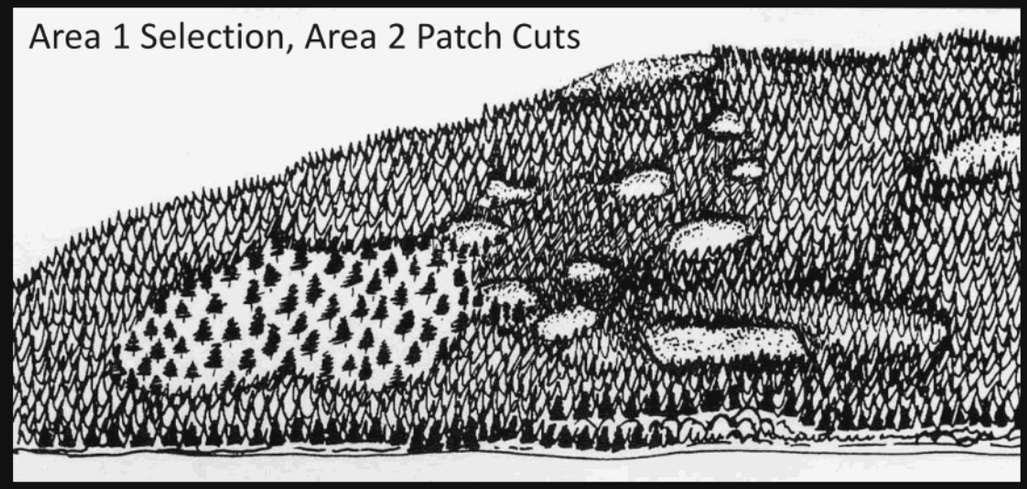
A potential solution would be a better shape and greater tree retention within the opening.

Page 75 VLD

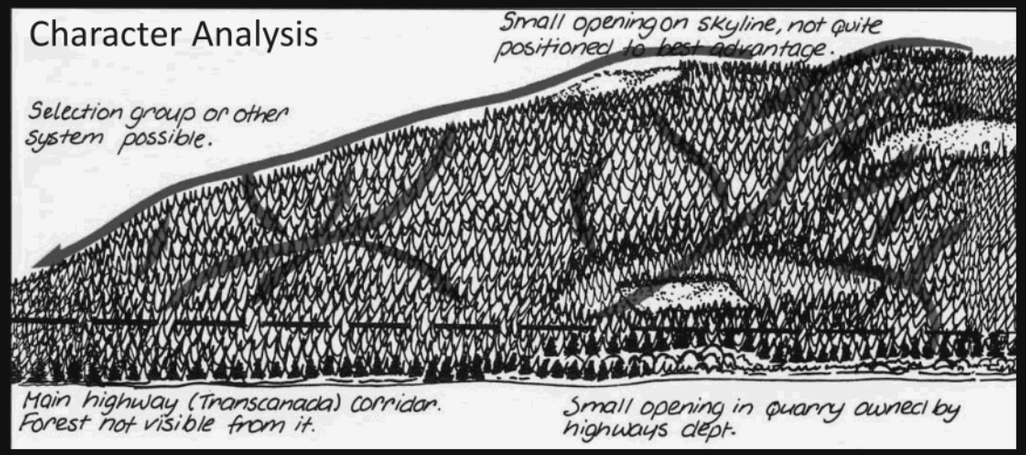
Shuswap Lake Landscape



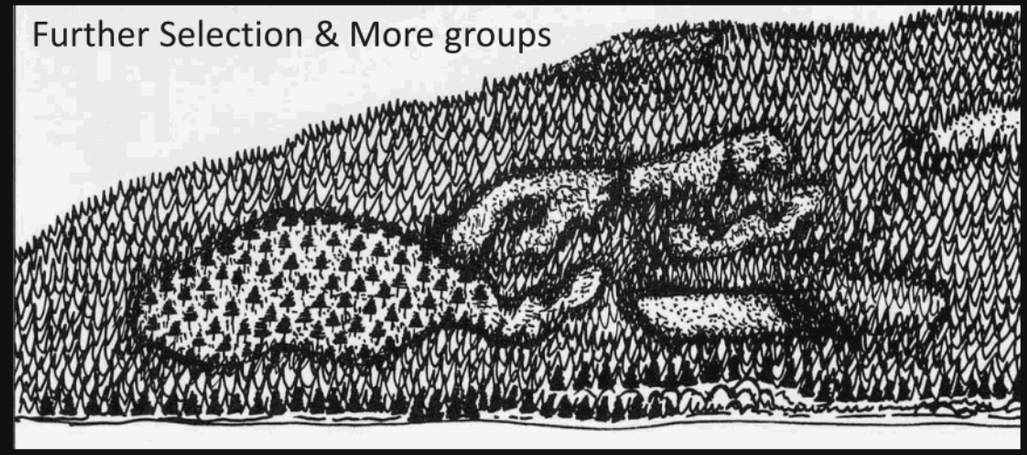
Area 1 Selection, Area 2 Patch Cuts



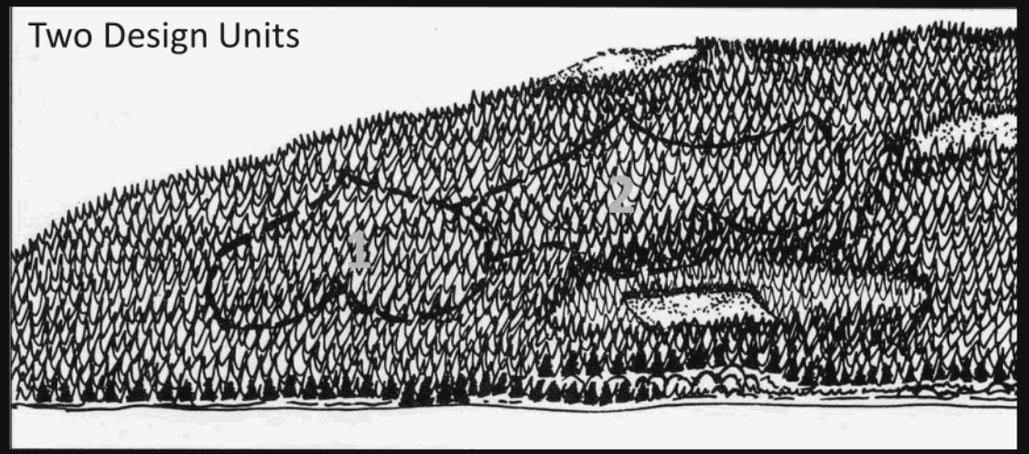
Character Analysis



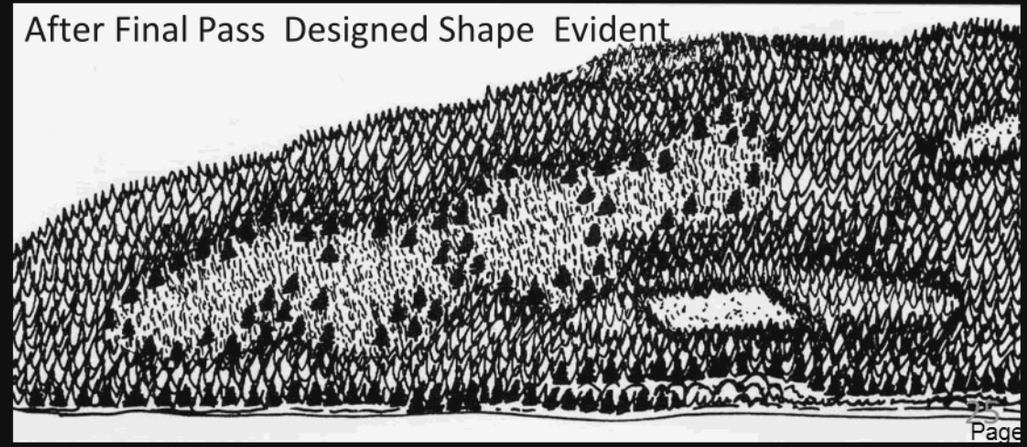
Further Selection & More groups



Two Design Units



After Final Pass Designed Shape Evident



Partial Cutting

This table was developed to provide the field practitioner with the ability to predict the out come of a selection cut based on a specific level of volume/stems removed.

Tree Height (Metres)

Volume (Stems) Removed in %	5	10	15	20	25	30	35	40	45	50
10	R	R	R	R	R	R	R	R	PR	PR
20	R	R	R	R	R	R	PR	PR	PR	PR
30	R	R	R	R	PR	PR	PR	PR	PR	PR
40	R	R	PR	PR	PR	PR	PR	PR	PR	M
50	PR	PR	PR	PR	PR	PR	PR	M	M	M
60	PR	PR	PR	PR	PR	M	M	M	M	M
70	PR	PR	PR	M	M	M	M	M	M	M
80	PR	PR	M	M	M	M	M	M	M	M
90	M	M	M	M	M	M	M	M	M	M

Tree Ht 14M Vol Rem 58%

Tree Ht 28M Vol Rem 56%

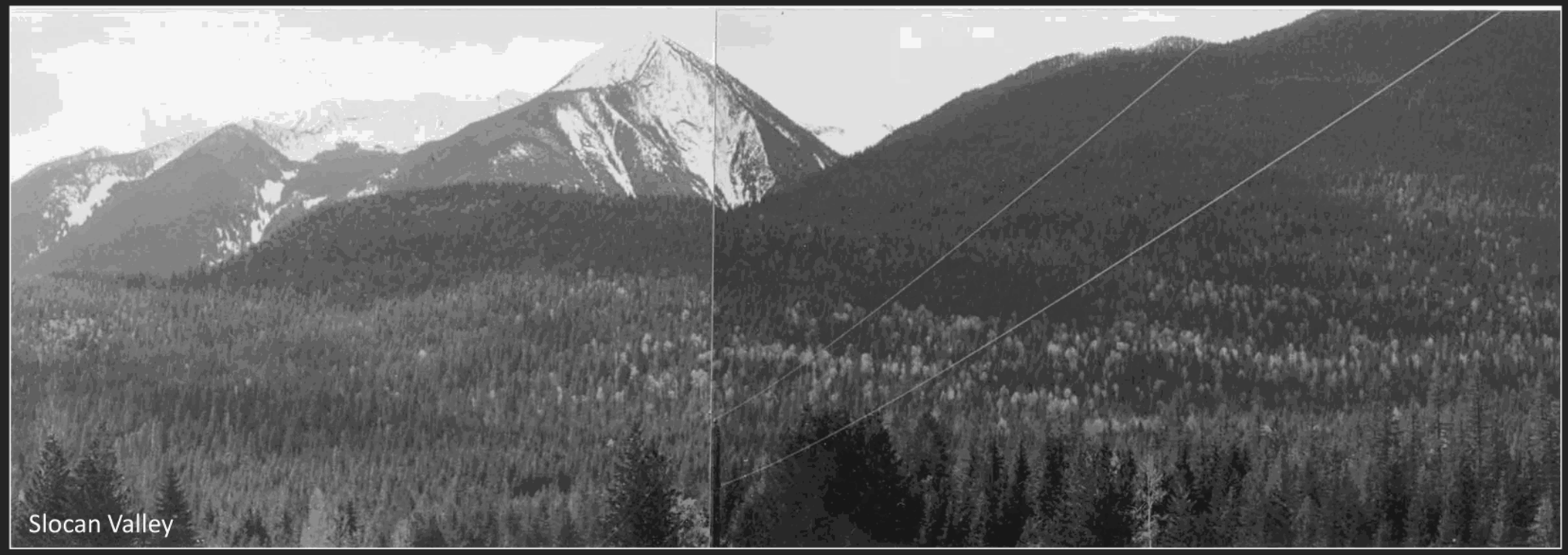
Tree Ht 28M Vol Rem 92%

4.4 Designing a Complete Pattern of Shapes

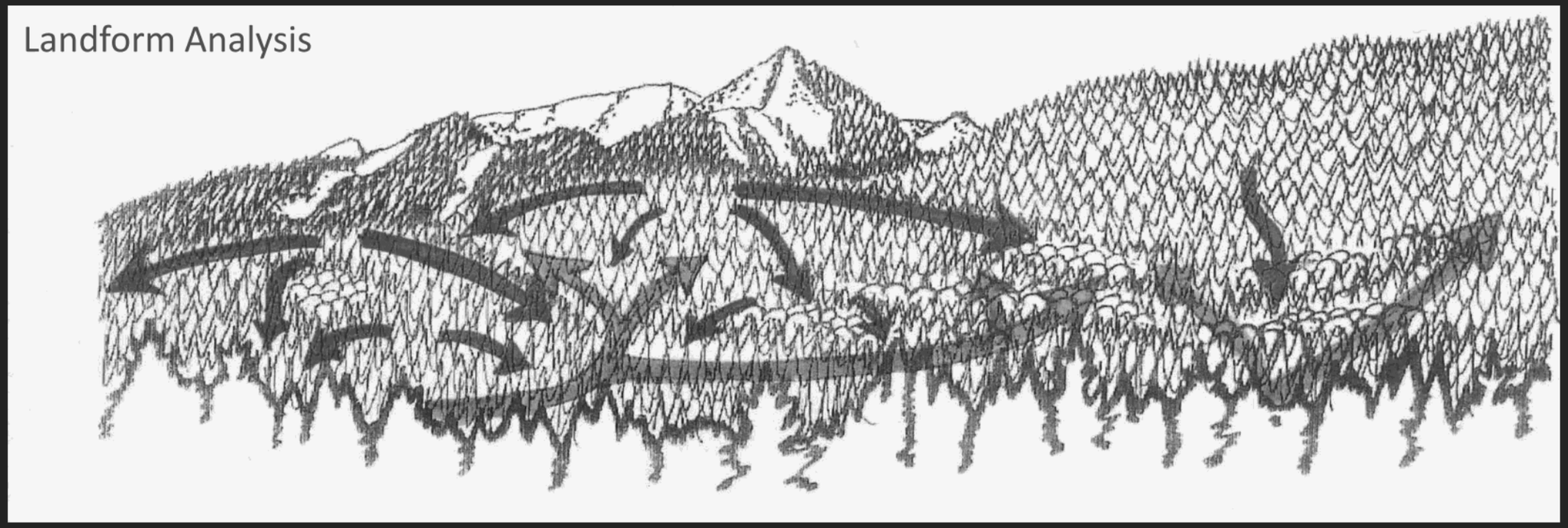
- **Assess the Landscape:**
  - conduct landform and character analysis
  - determine operability and other considerations
- **Design the Pattern of Shapes:**
  - identify the major patterns in landform revealed by the landform analysis
  - design the large scale, first order units such as the boundaries between operable, inoperable and riparian areas first.
  - Design the convexities and hollows of the landform into a series of well scaled caps and units.
  - Subdivide areas between caps and valleys into small scale units if required.

Assess the Pattern:

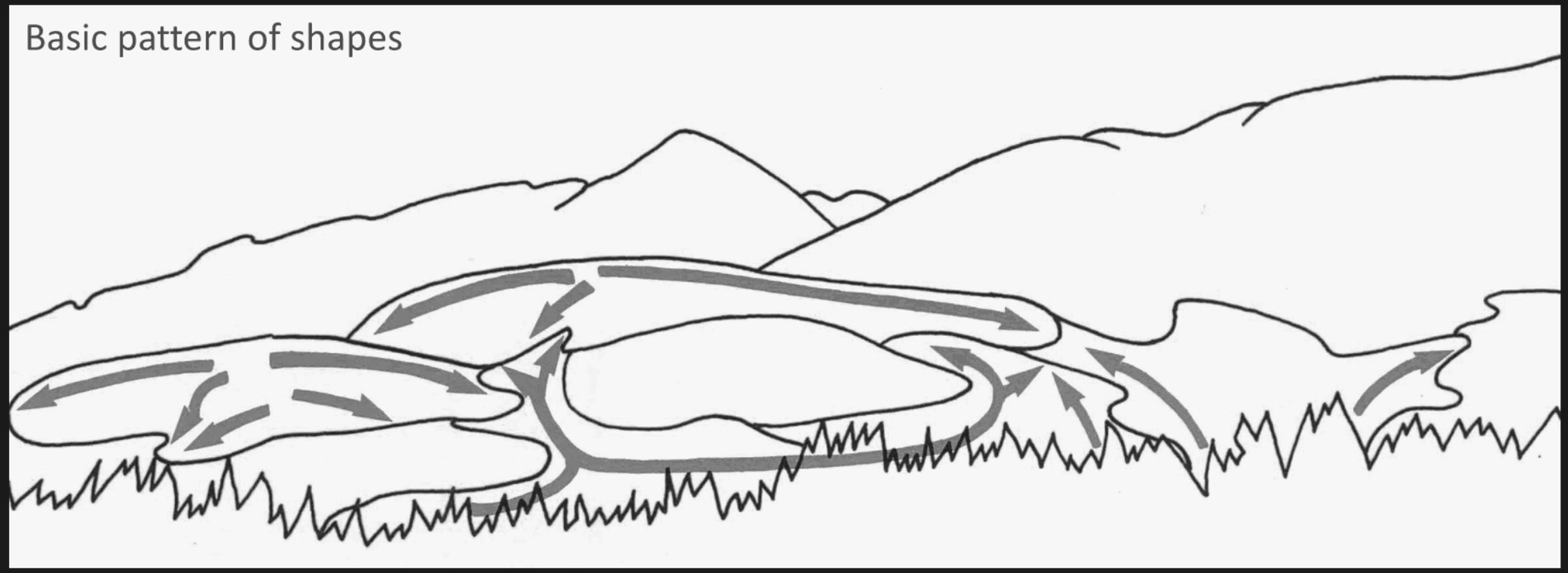
- the shapes should be carefully checked to eliminate symmetry, tension, parallel and geometric effects.
- interlock, balance, proportion and scale should be incorporated and the pattern tested for operability, accessibility, wind firmness, and other practical considerations.



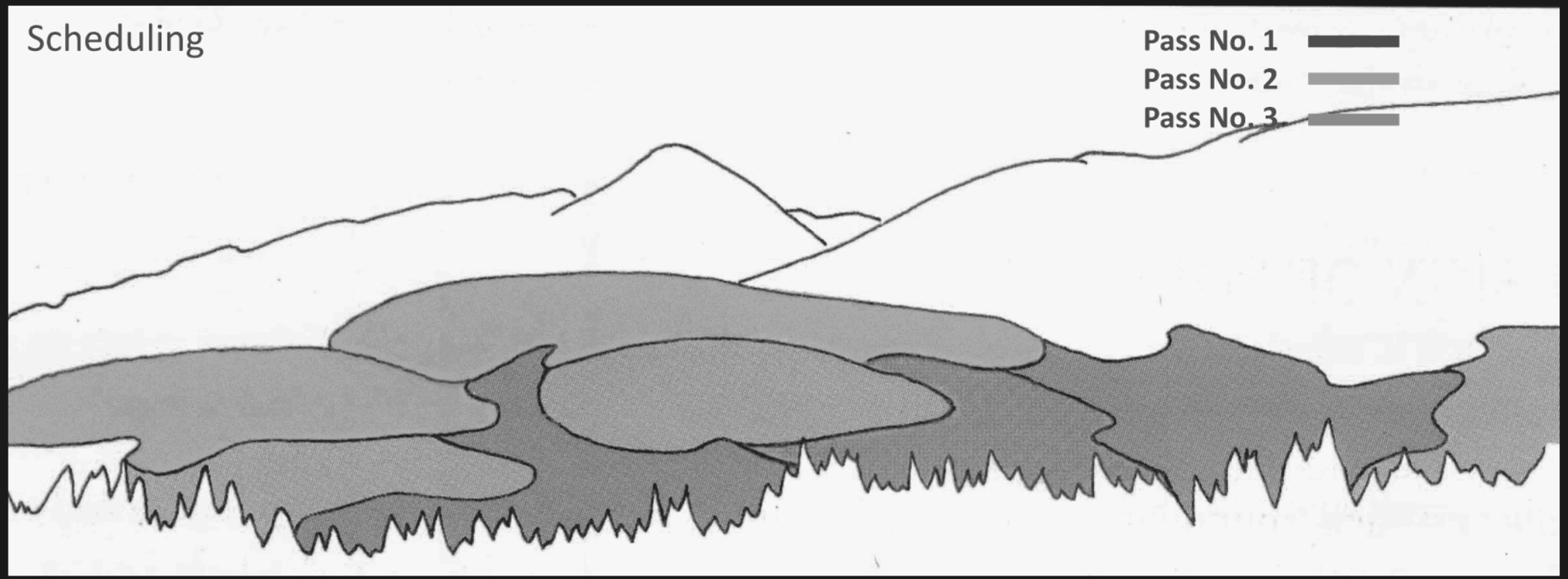
Landform Analysis

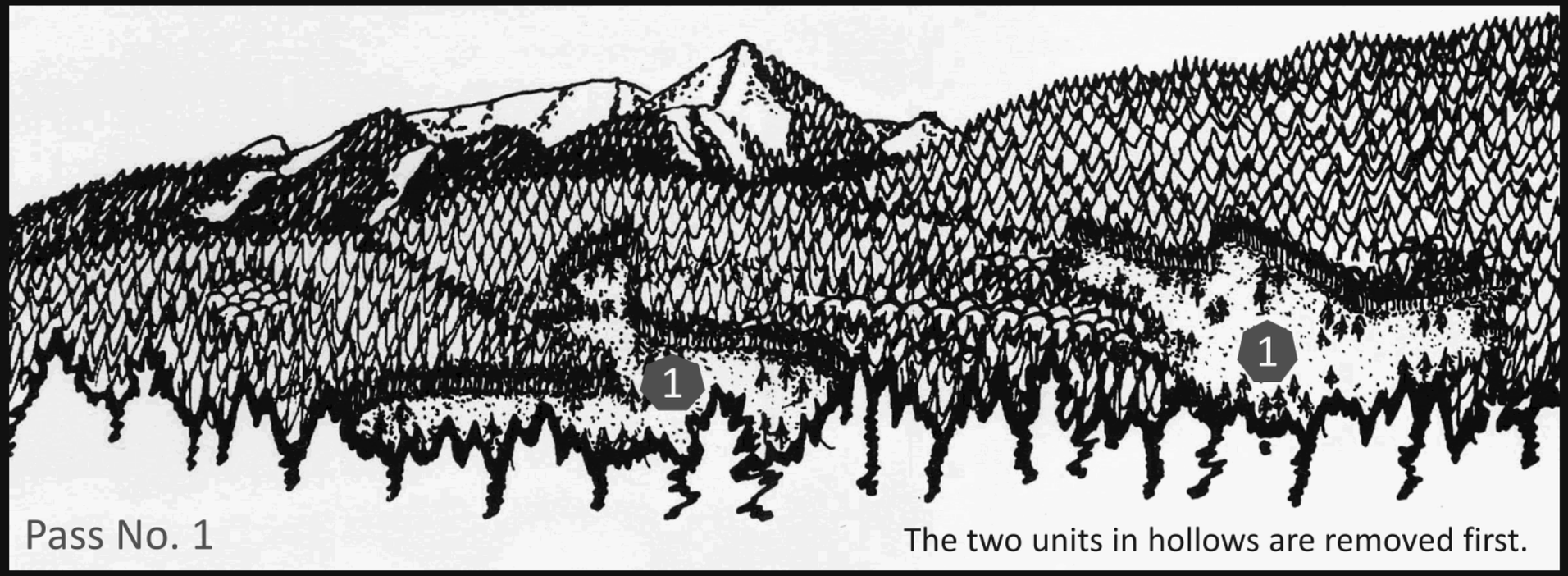


Basic pattern of shapes



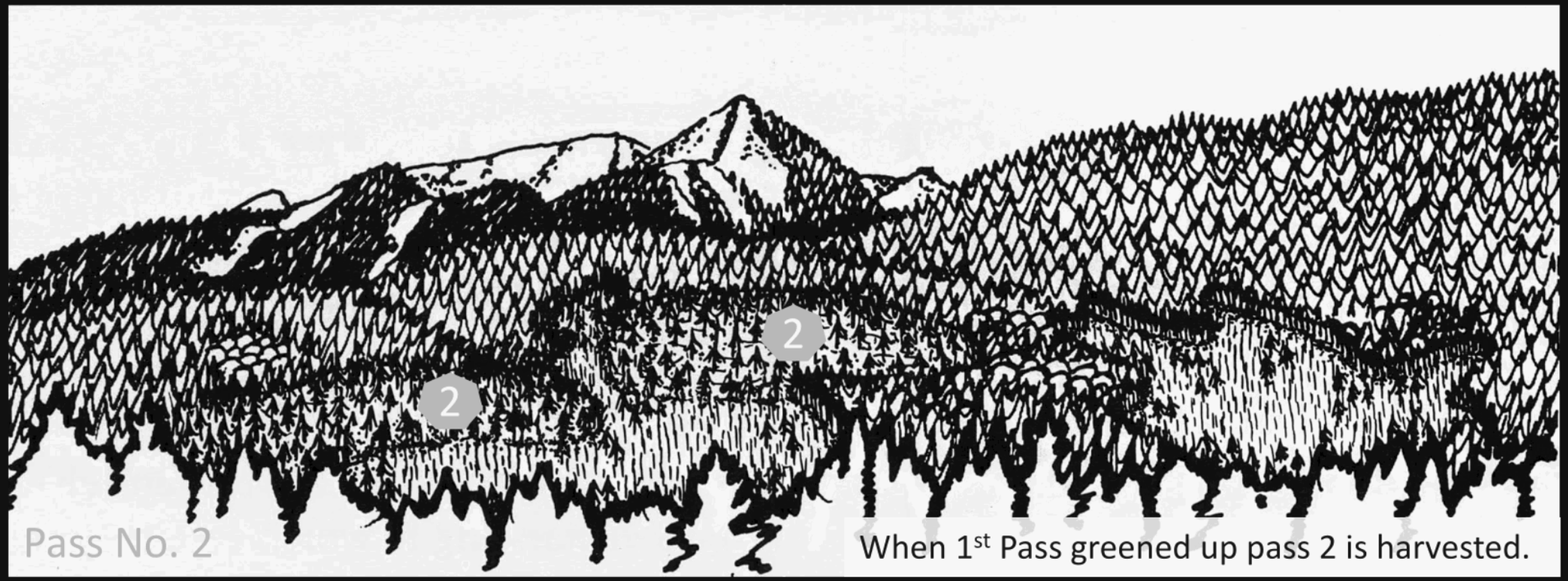
Scheduling





Pass No. 1

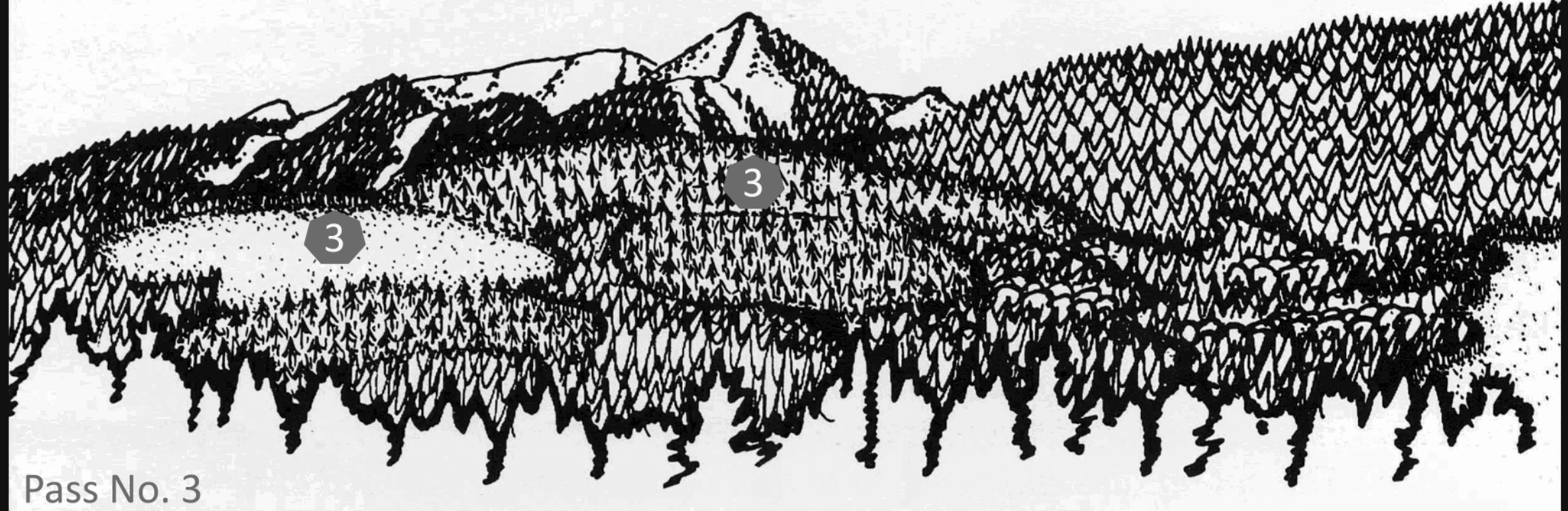
The two units in hollows are removed first.



Pass No. 2

When 1st Pass greened up pass 2 is harvested.

Pass 1 & 2 cuts have achieved VEG. Clear cut added top right & selection block top left.



Pass No. 3

Exercise #2-7 Complete Pattern of Shapes

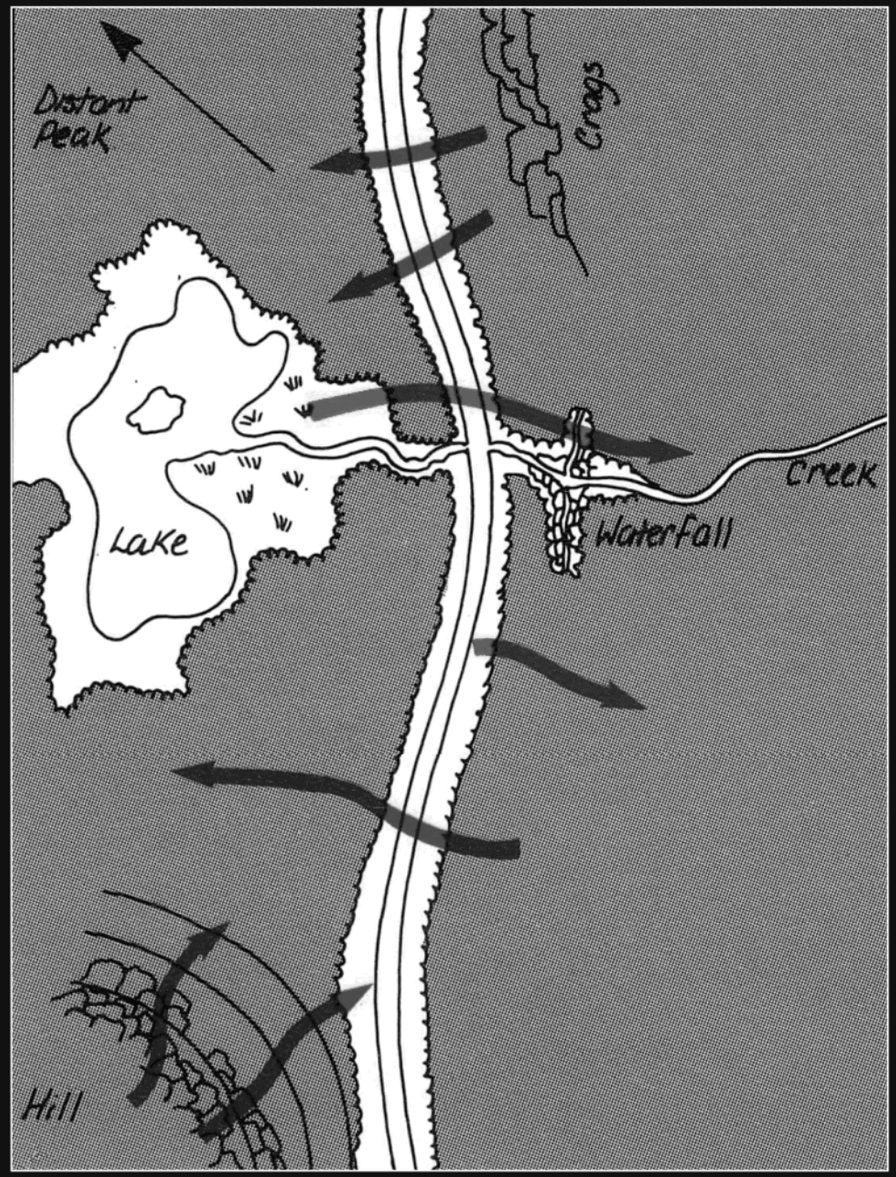
FREP Sample DVA-002

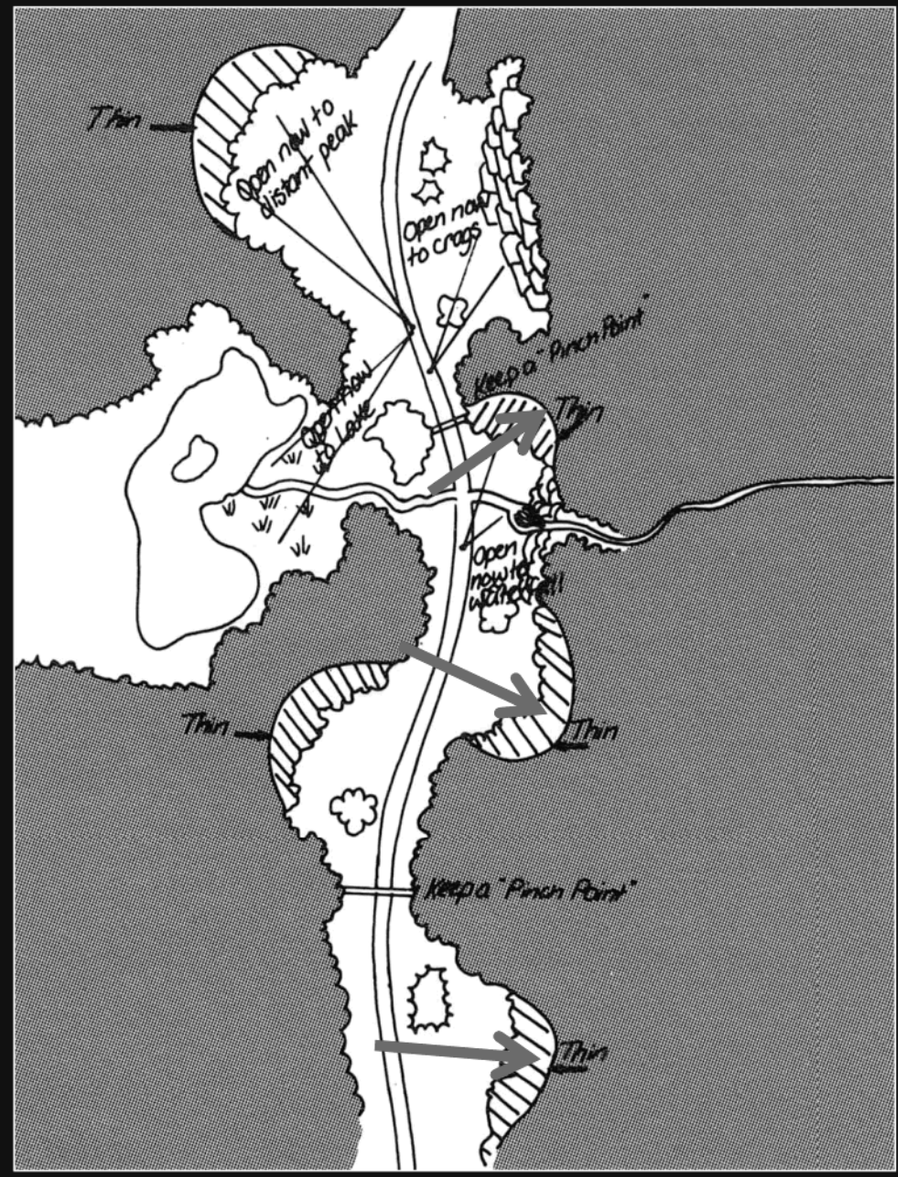
Visual Quality Objective = PR 3.9% altered moderate to good design Conclusion PR Achieved

4.5 Design of Foreground and Roadsides

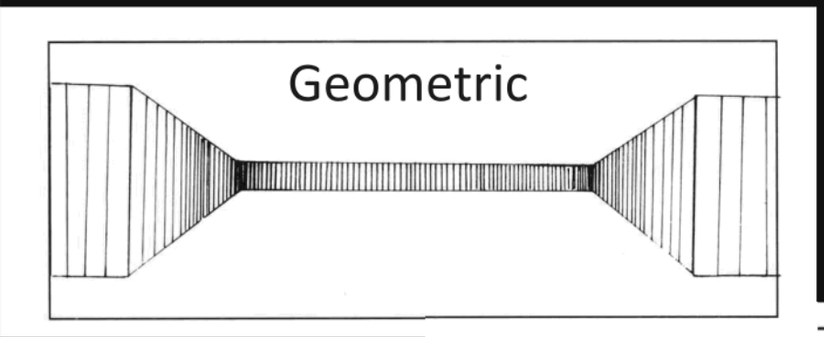
There are many design techniques that can be utilized to reduce the impact of roadside harvesting and address public acceptance issues.

Identifying and working with the major visual force lines can help guide where to harvest the foreground and where to keep retain the road right-of-way.

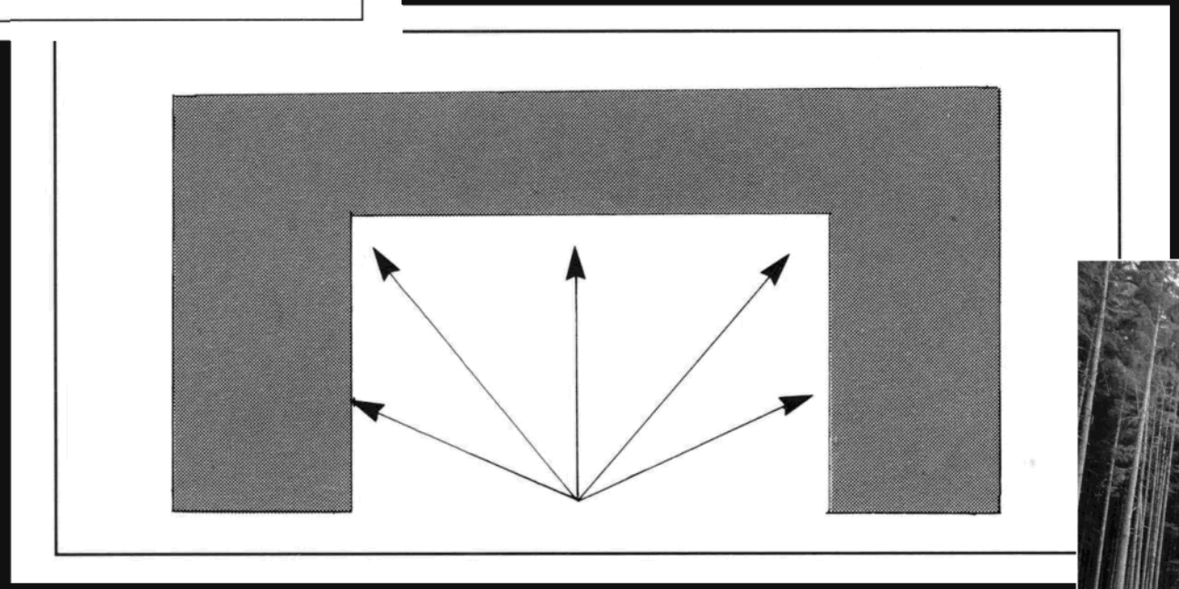




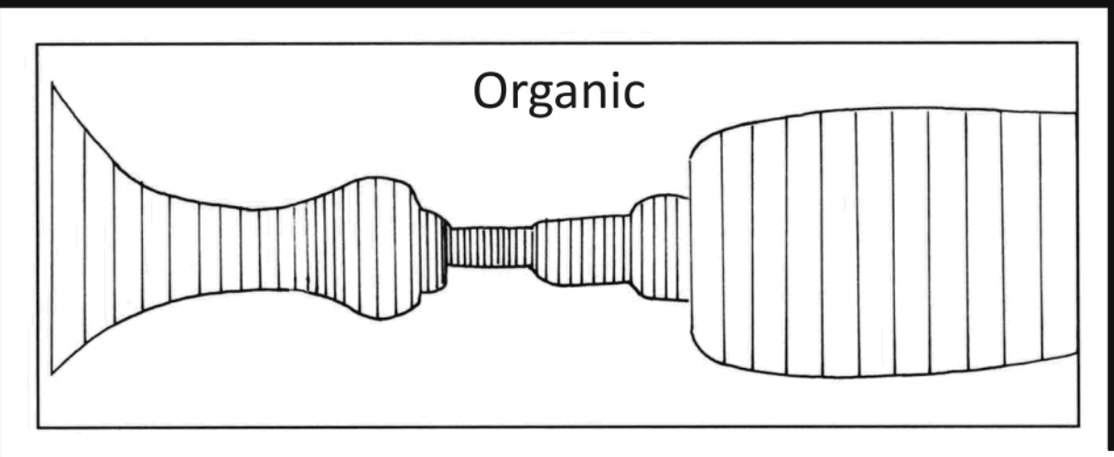
Harvest Shape

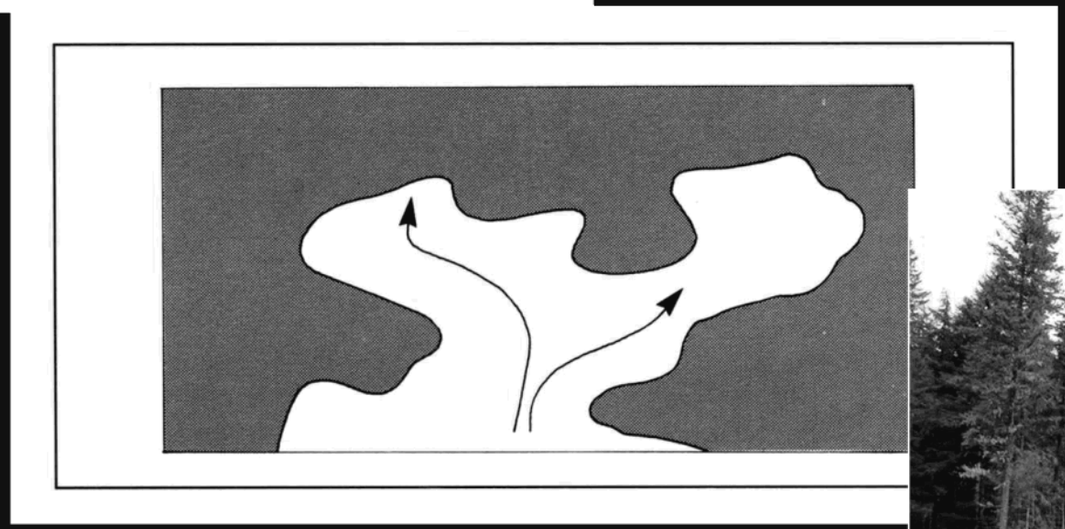


Obvious geometric shapes stand out because of their straight line boundaries and abrupt unnatural appearing edges. The eye moves about restlessly in rectangular blocks with no place to go.



Irregular, interlocking shapes will appear smaller and be more pleasing to the eye.





Edge

Feathering the forest edge by leaving an increasing density of trees toward uncut forest, helps soften the visual impact of a stark forest edge.

Edges in nature tend to be soft and curvilinear and not well defined. Harvesting that creates a gradual and natural appearing edge transition tends to produce a more pleasing visual impact.

Screening

Roadside screens are a useful tool to retain the most visually sensitive roadside. Screens must be effective in thickness (visual penetration) and tree health or don't use them.

A thick (50M) effective screen of merchantable timber.

An ineffective thin (10M) use of residuals as a screen.

In Block Retention

The use of aggregated Retention patches within roadside openings is a design technique that can be used to effectively break up opening length and reduce visible opening size.

Effective Retention consisting of a multilayer patch that breaks up opening. PAR 0.05

Less-effective Retention, a small patch in large opening. PAR -1.88

Slash & Coarse Woody Debris

Reducing slash quantity, cutting stumps to ground level and removing root wads and other logging debris within the immediate 0-50 meters along roadsides can significantly reduce the visual impact and result in more positive public perceptions

Low levels of harvesting debris result in improved PAR. +1.32

High concentration of harvesting debris results in reduced PAR. PAR -1.24

Silvicultural Systems

Silvicultural systems that retain some stand structure (Commercial Thinning, Single-tree Selection, etc.) are preferred over systems that remove most of, or all of the trees.

Retention PAR +2.19
23% Vol Removed

Partial Retention PAR +0.79
44% Vol Removed

Max Modification PAR -0.97
90% Vol Removed

End

Managing for Visual Quality

Under the Forest and Range Practices Act

Ministry of
Forests, Lands and
Natural Resource Operations

BRITISH COLUMBIA

Managing for Visual Quality

Up until this point, we have learned about public perceptions, how to identify the visual sensitivity of a landscape and how to recommend a VQC.

None of this process has occurred in the legal world.

To enable management under FRPA we need two things to happen:

- the designation of a scenic area and
- the establishment of a VQO

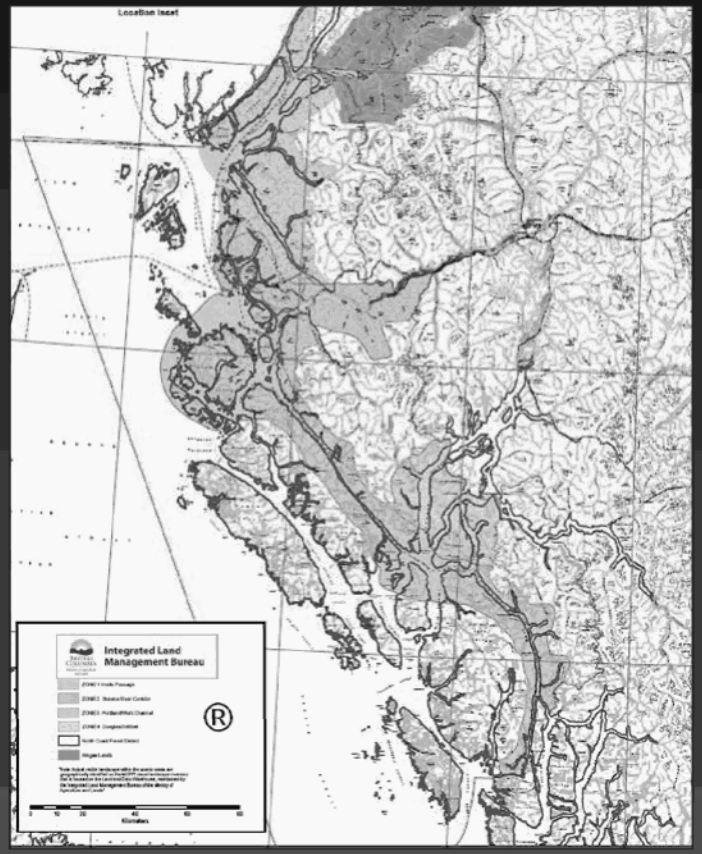
Both actions are required!

Scenic Areas

What are Scenic Areas?

They are best likened to Land Use Plan, Special Management Zones.

By definition they are visually important areas that require special management because of their physical characteristics and public use/concern.



Scenic Areas

- Under the Code, scenic areas were designated by the District Manager. (In most cases they were visually sensitive areas or VLI information made known to licensees.)
- Scenic Areas made known under Code were continued in 2004 under FRPA Sect. 180
- New Scenic areas are created, amended and cancelled by Resource District Managers under Government Action Reg. Sec. 7(1)

Visual Quality Objectives

VQOs are management objectives established by the DM under the Government Action Regulation Sect 7(2). They are used to reflect society's desired level of visual quality on the landscape.

The Forest Planning and Practices Regulation S.1.1 defines 5 categories of alteration: Preservation, Retention, Partial Retention, Modification & Maximum Modification.

Retention

Partial Retention

Modification

Visual Quality Objectives

Preservation:

Alteration, when assessed from a significant public viewpoint, is:

(i) very small in scale, and

(ii) not easily distinguishable from the pre-harvest landscape

Visual Quality Objectives

Retention:

Alteration, when assessed from a significant public viewpoint, is:

(i) difficult to see,

(ii) small in scale, and

(iii) natural in appearance.

Predicted by 0 - 1.5% alteration

Visual Quality Objectives

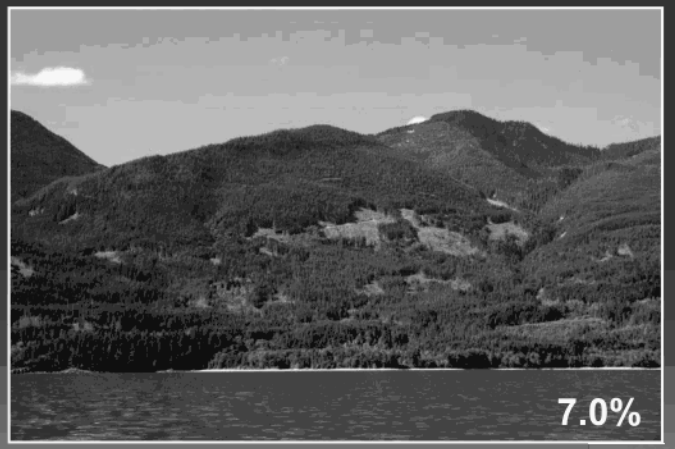
Partial Retention:

Alteration, when assessed from a significant public viewpoint, is

(i) easy to see,

(ii) small to medium in scale, and

(iii) natural and not rectilinear or geometric in shape.



Predicted by 1.6 - 7.0% alteration

Visual Quality Objectives

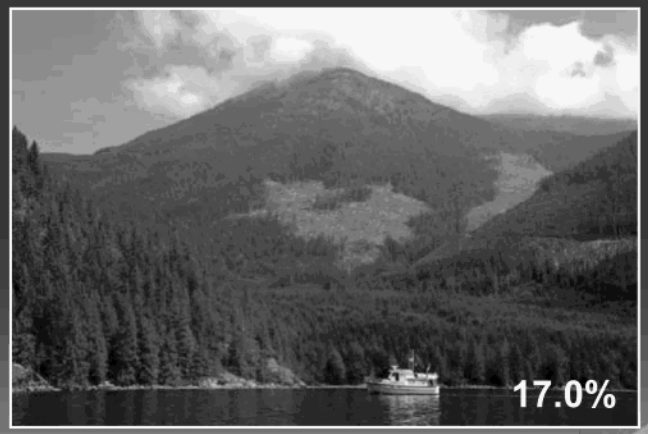
Modification:

Alteration, when assessed from a significant public viewpoint, is

(i) is very easy to see, and

(ii) is (A) large in scale and natural in its appearance, or (B) small to medium in scale but with some angular characteristics;

Predicted by 7.1 – 18.0% alteration



Visual Quality Objectives

Maximum Modification:

Alteration, when assessed from a significant public viewpoint, is

(i) very easy to see, and (ii) is

(A) very large in scale,

(B) rectilinear and geometric in shape, or

(C) both.

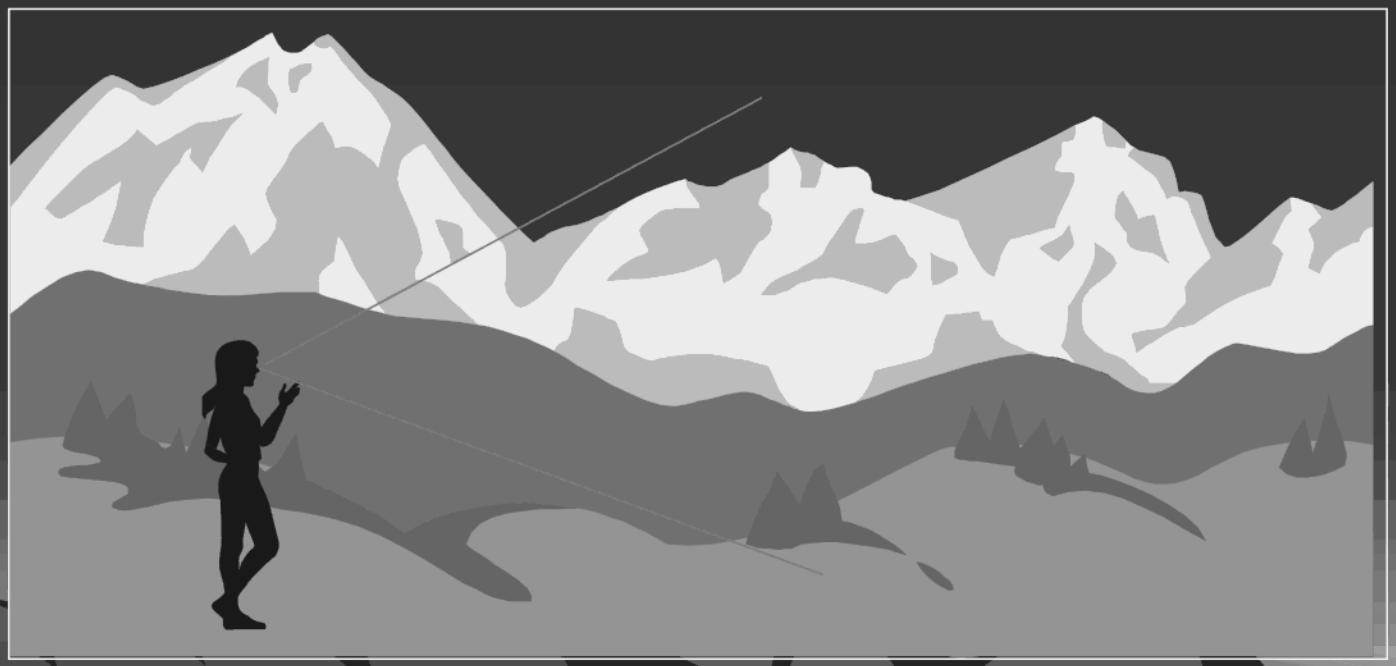
Predicted by 18.1 – 30.0+ % alteration

Significant Public Viewpoint

FPPR proposed definition

A significant public viewpoint:

a place or location on the land or water that is accessible to the public, provides a viewing opportunity and has relevance to the landform being assessed.



Choosing Viewpoints for VIA's

Examples of viewpoints that should be considered significant public viewpoints:

- a stretch of highway leading toward a harvest unit (i.e. focal view)
- a rest stop,
- a recreation site or park,
- a group of homes, or settlement, or
- a tourist-related commercial enterprise.

It is important to review the location(s) offering the best or most direct view of the alteration. These may not necessarily be viewpoints that provide a stationary or stopping location.

A Word of Caution: Visual Landscape Inventory viewpoints are used to derive visual sensitivity unit boundaries and to rate the visual sensitivity of the landscape. They were not derived to assess VQO compliance.

Visual Quality Objectives

- Under the Code VQO's were established by the District Manager or through a planning process.
- VQOs established under FPC were continued under FRPA Sect. 181 in 2004.
- Recommended VQCs were continued as objectives under GAR Sect. 17 (if released in a letter prior to Oct. 24, 2002)
- FPPR Sect. 9.2 provides an OSBG for Visual Quality. (These apply to existing SA without rVQCs or eVQOs).
- Establishment of new and amendment or cancellation of existing VQOs are done by MFLNRO under GAR Sect. 7(2).

How are VQOs established?

Under the GAR S. 2 there are 3 tests that have to be met prior to the District Manager signing off an order to Establish, vary or cancel VQOs.

1. the order is consistent with (other) established objectives.
2. the order will not unduly reduce timber supply.
3. order must not adversely effect ability of agreement holder to exercise harvesting or grazing rights.

In addition to the above tests GAR 3(2) requires that the DM provide holders of agreements under the Forest Act or the Range Act that will be affected by the order with an opportunity for review and comment. Other key stakeholders that may be affected should also be consulted, inc. First Nations.

Establishing VQOs (Cont.)

Once the tests have been addressed and key stakeholders, including First Nations, have been consulted the District Manager can proceed with writing an order establishing, amending or canceling VQO's

Once the Order has been written and signed by the District Manager GAR Sect. 4 (2)(a)(b)&(c) requires the order to be posted on the MFLNRO website, published in the B.C. Gazette and made publicly available at the regional office.

BRITISH COLUMBIA

Ministry of Forests and Range

File: 10285-30 Final Order

Date: January 31, 2007

Establishment of Scenic Areas and Visual Quality Objectives within the Columbia Forest District

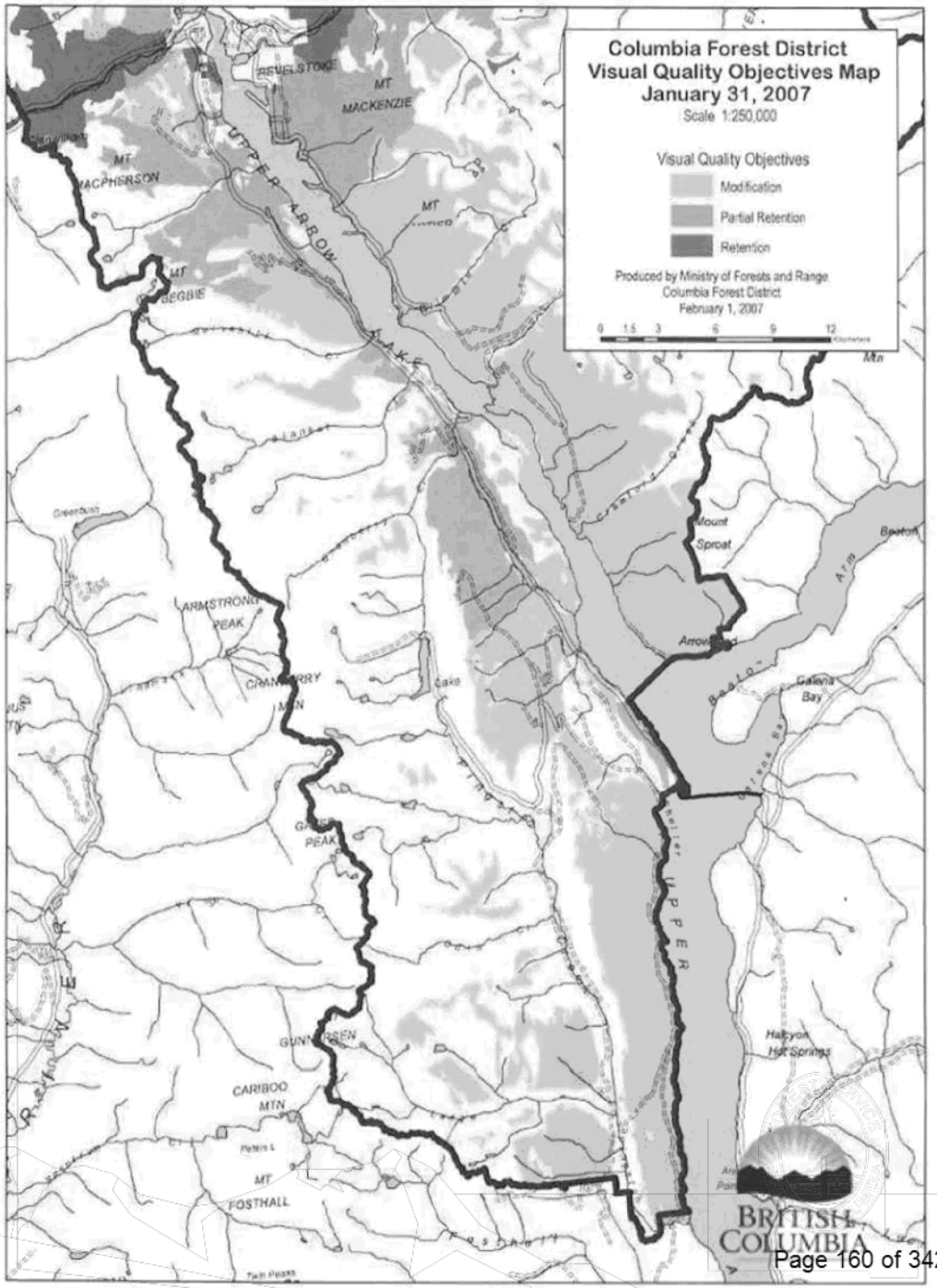
I, David Raven, District Manager for the Columbia Forest District, having been delegated the authority to establish, repeal or amend scenic area polygons as part of an update, refinement, or revision of an existing visual landscape inventory by the Minister responsible for the Land Act, exercise this authority and order that pursuant to Section 7(1) of the *Government Actions Regulation (GAR)*, that the Scenic Areas shown on the attached map titled Columbia Forest District Visual Quality Objectives Map and dated January 31, 2007 are established for that portion of the Columbia Forest District south of Revelstoke, B.C. and west of the Upper Arrow Reservoir. This order repeals and replaces the Scenic Areas that were previously established for this area under the FPC and continued under FRPA.

Also, pursuant to Section 7(2) of the *Government Actions Regulation (GAR)*, I, David Raven, District Manager for the Columbia Forest District, establish visual quality objectives (VQOs) for the Scenic Areas in that portion of the Columbia Forest District south of Revelstoke, B.C. and west of the Upper Arrow Reservoir shown on the attached map titled Columbia Forest District Visual Quality Objectives Map and dated January 31, 2007. This order repeals and replaces the Visual Quality Objectives that were previously established for this area under the FPC and continued under FRPA.

January 31/2007

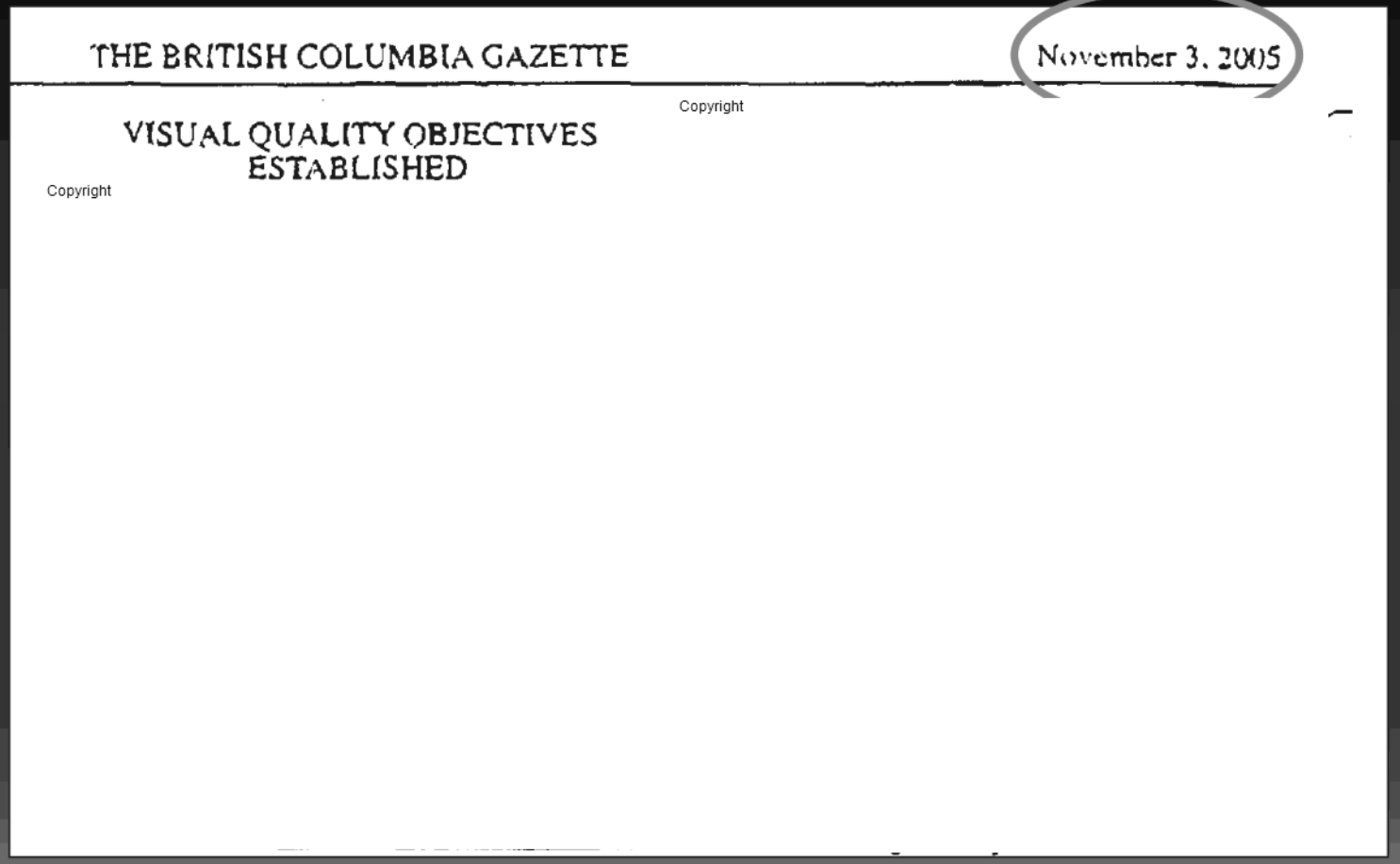
David Raven, R.P.F.
District Manager
Columbia Forest District

Date



Sample VQO Order & Map

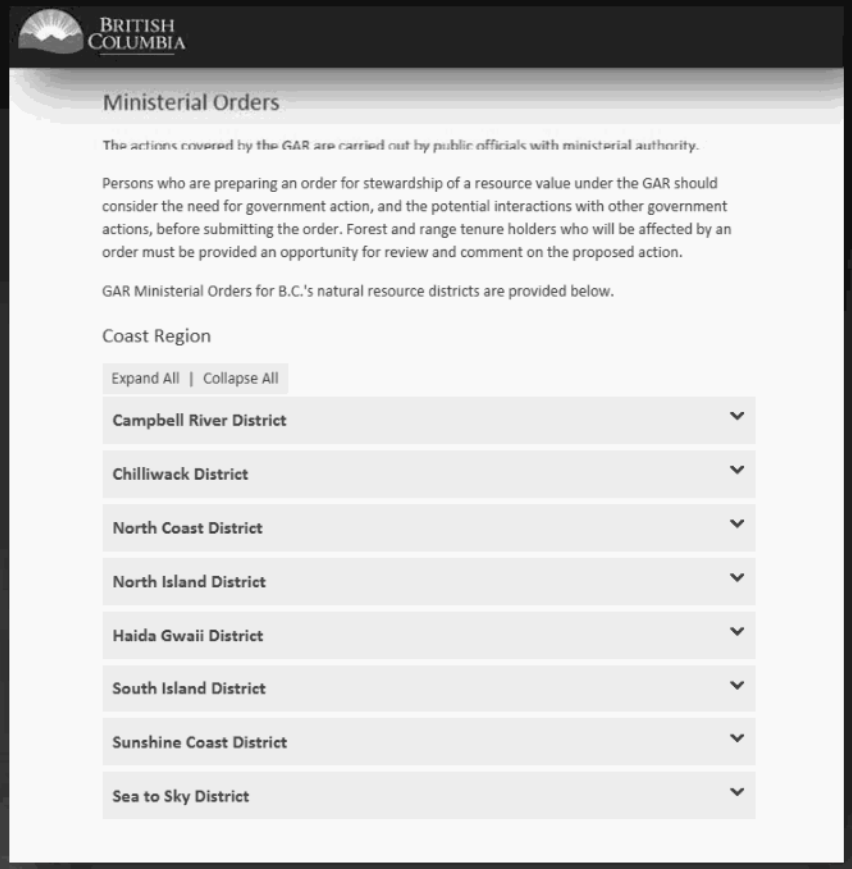
Sample Gazette Notice



THE BRITISH COLUMBIA GAZETTE November 3, 2005

VISUAL QUALITY OBJECTIVES ESTABLISHED

Where do you find GAR Orders?



You will find new orders posted to the Government Actions Regulation web page

Note: Since FRPA and FPPR grand parented most objectives, you will only find orders for new VQO's or changes to old VQOs.

http://www2.gov.bc.ca/gov/content/environment/natural-resource-stewardship/policy-legislation/legislation-regulation/forest-range-practices-act/government-actions-regulation

Forest Stewardship Plan

Scenic Area Requirements:

A Licensee preparing an FSP must identify within each FDU, those scenic areas that were in effect 4 months before the plan was submitted to the DM for Approval. (FPPR 14(2)&(3)(e))

Forest Stewardship Plan

VQO Requirements:

- A FSP must specify intended results/strategies, in relation to OSBG for visual quality or for established VQOs. FRPA 5(1)(b)(i)&(ii)
- Results or strategies for VQOs/OSBG may be certified by a professional, signifying that the results and strategies meet the content and approval tests. (FRPA 16 (1.01)(a). FPPR 22.1)
- The Results/Strategies must be consistent with OSBG for visual quality and with VQOs. FRPA 5 (1.1)
- The holder of a FSP or a woodlot licence plan must ensure that the intended results specified in the plan are achieved, or the strategies are carried out. FRPA Section 21(1).

Forest Stewardship Plan

“Result" means a description of

(a) measurable or verifiable outcomes in respect of a particular established objective, and

(b) the situations or circumstances that determine where in a forest development unit the outcomes under paragraph (a) will be applied;

Forest Stewardship Plan

“Strategy" means a description of

(a) measurable or verifiable steps or practices that will be carried out in respect of a particular established objective, and

(b) the situations or circumstances that determine where in a forest development unit the steps or practices will be applied;

Forest Stewardship Plan

FSP results/strategies for visual quality are required to be consistent to the extent practicable with a VQO. To achieve these tests, FSP commitments must specify:

- that they are consistent with VQOs set for the area;
- that they are consistent with FPPR 1.1 definitions for each VQO;
- that criteria for meeting the objective applies to the ***completed*** primary harvesting and road building;
- where the result or strategy will apply (the scenic area);
- who will apply the result or strategy (the license holder); and,
- what the result or strategy applies to (harvesting and road building).

Forest Stewardship Plan

What should a DM be looking for in an FSP with respect to Visuals?

- FDU's to identify location of Scenic areas.
- There must be a R/S for Scenic Areas with VQOs.
- The Result/Strategy must be be measurable, verifiable and describe the circumstances where they apply and must be consistent with the established VQO.

Forest Stewardship Plan

Exercise #1-3

Two different FSP R/S statements.

Read them over and identify in each case if:

1. **they are a result or strategy,**
2. **measurable or verifiable,**
3. **specify where they will be applied, and**
4. **will lead to consistency with the VQO.**

Result/Strategy #1

Road construction and/or timber harvesting carried out or authorized by the holder(s) of the FSP within scenic areas established on December 14, 2005 within the Campbell River Forest District, will be consistent with:

a) the visual quality objectives as established by the District Manager on December 14, 2005; and

b) the categories of visually altered forest landscape as defined in FPPR s. 1.1.

Comments:

- **Reads like a result**
- **Applies to scenic areas in DCR.**
- **Outcome measured against VQO definitions in FPPR s1.1**
- **Should lead to consistency with VQO if implemented appropriately.**

Result/Strategy #2

For areas within the HWY 200 scenic areas that are identified with a Visual Quality Objective of Preservation, Retention or Partial Retention, conduct a visual impact assessment. The visual assessment will determine the percent alteration on a perspective basis and will also consider the shape of the block on the hillside.
Visual modification on a perspective scale will be within the limits prescribed in the VIA Guidebook, unless there is explicit indication in the site plan that the limit will be exceeded and a rationale.
Results of Strategy – Percent alteration figures.

Comments:

- **Reads like a strategy** (will do a VIA for P, R & PR)
- **Applies to scenic areas along Hwy 200.**
- **Outcome measured against limits prescribed in VIA Guidebook.**
- **May not lead to consistency with VQO as operations may not be consistent with the levels of alteration defined in FPPR 1.1. Also the last statement suggests there will be situations where the VQO may be exceeded**

A Potential Outcome of Result/Strategy #2

Visual Impact Assessment done, % alteration close, but design not applied.

Visual Simulations, VIA's and Visual Design

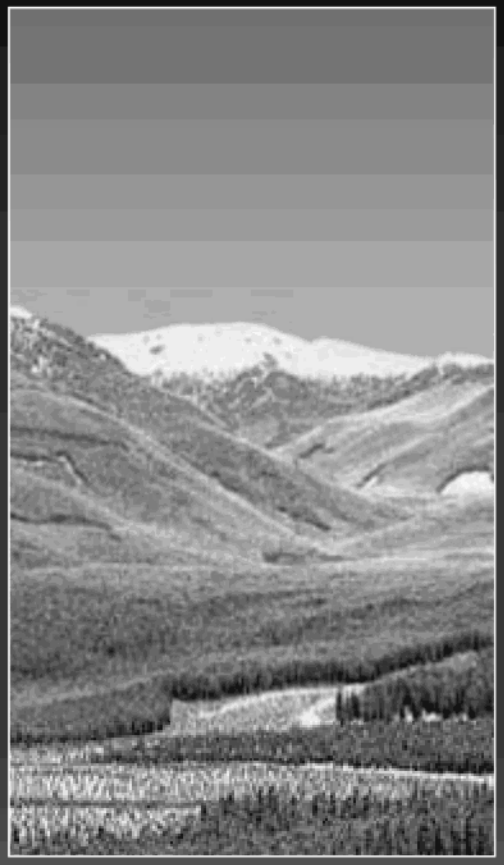
Courtesy CALP

Visual Simulations

What are They?

"…a representation of the real world that can be displayed as 3D simulations" (Lange 2001)

"pictures of real places seen from a particular perspective which can be manipulated…to show features of importance, or future conditions based on land management decisions."
(Sheppard, Lewis et al. 2004)



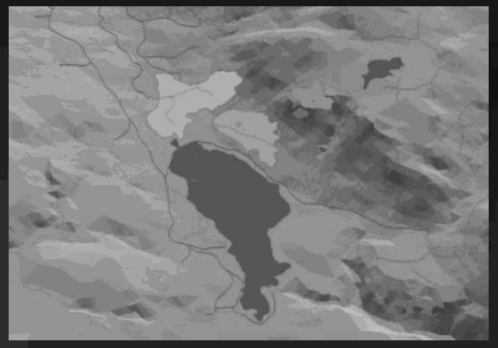
Courtesy Enfor Consultants Ltd

Role of Visual Simulations in Forestry

1. Design- Planning (What if? – Idea exploration)

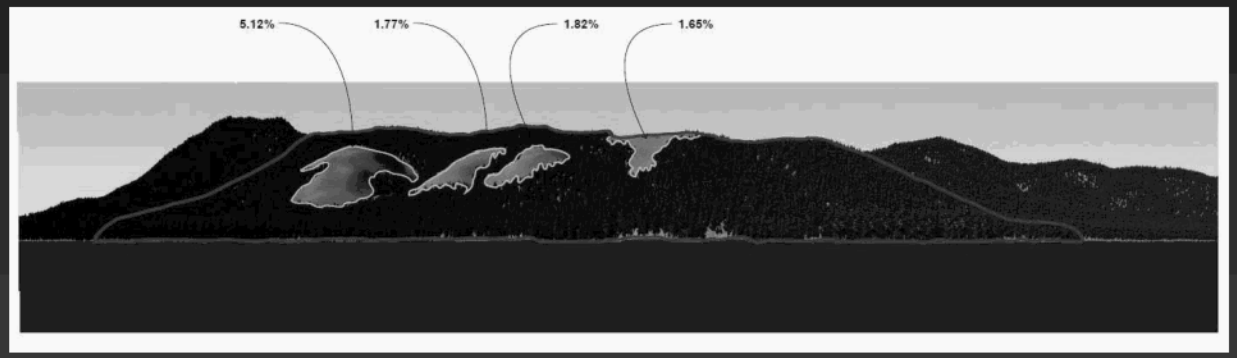
2. Design Evaluation (VIA's , EVQO's, Visual Design)

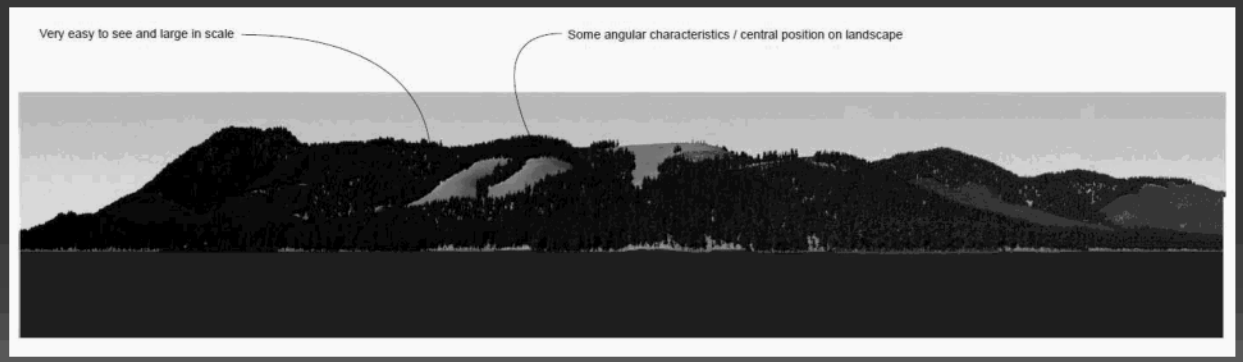
3. Communication / Presentation / Public Engagement / Public Preferences



VIA's and Visual Simulations

A VIA is not just a visual simulation.
Visual simulations are, however, central to VIA's.



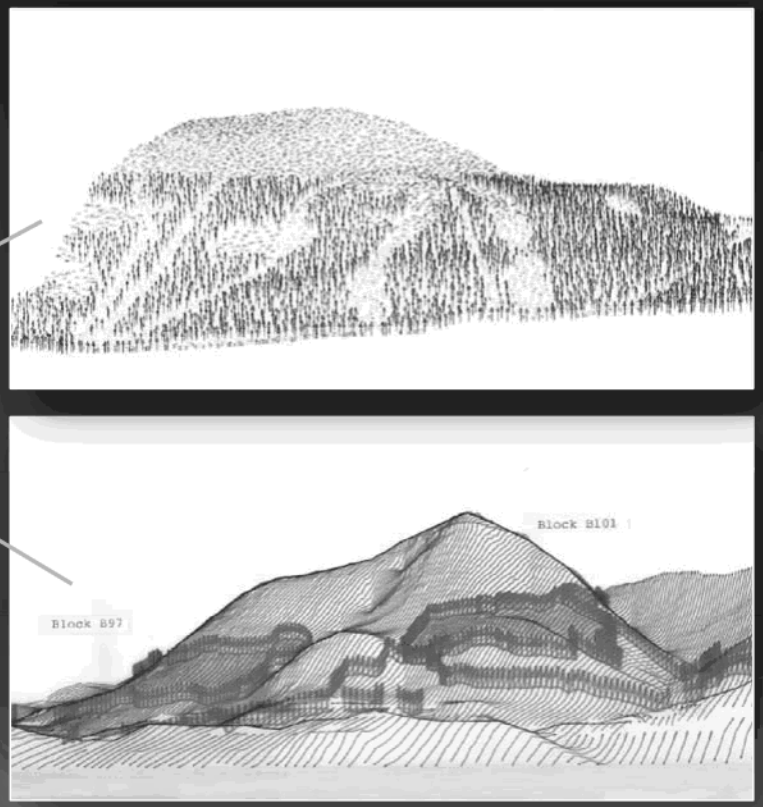


Some form of visual simulation is necessary when conducting an VIA

History of Visual Simulations

Four decades of Landscape Visualization in forestry

- Hand drawn graphics
- USDA VIEWIT (1975)
- USDA Perspective Plot (1978)
- GIS Revolution - Terra-Soft / Pamap (wireframe / drapes)
- Vista Pro / WCS (1994)
- The 3D revolution of the 2000's
- Virtual Reality



A Typology of Simulation Methods

GIS Based

- Simple surface models and drapes

Image Manipulation

- Photo rendering
- Photomontage

Near Photo Real 3D

- Detailed surface models with image objects (e.g. individual tree species) and texture

Hybrid (Mixed Methods)

Method Selection: Considerations

- Simulation objectives / aims
- Level of concern / sensitivity for the subject landscape
- Stage of the design / assessment process
- Data import /export capabilities.
- User friendliness / skill level required
- Level of realism desired
- Scale of objects or areas to be rendered (e.g. simulations at the site, stand, landscape, regional scales).
- Ability to readily share / distribute output
- Availability of image sources /textures

GIS-Based

- 3D Analyst / ArcScene (ESRI)
- Google Earth

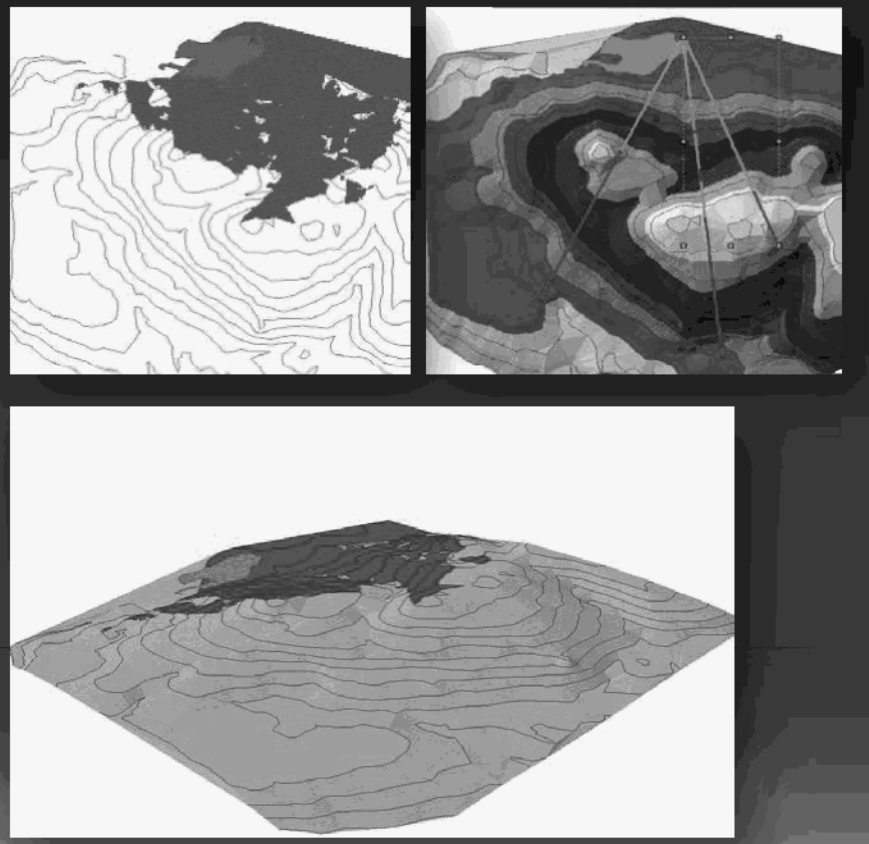
3D Analyst / ArcScene

3D Analyst

- Simple surface models (TIN)
- Visible area mapping
- Line of Sight analyses

ArcScene (3D Visualization)

- Image drape / load 3D objects / symbols
- Interactive on-screen navigation
- 2D / 3D design capabilities

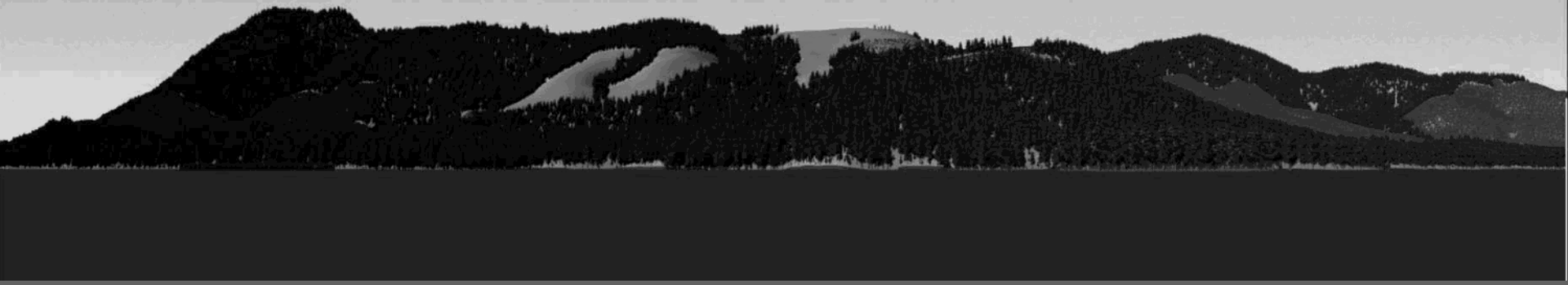


Courtesy Cam Campbell

ArcScene: Visual Impact / Design Assessment

ArcScene Simulation: Cutblock Boundary (polyline) Extruded to Avg. Tree Height

Simulation: Visual Nature Studio:



ArcScene: Visual Impact / Design Assessment

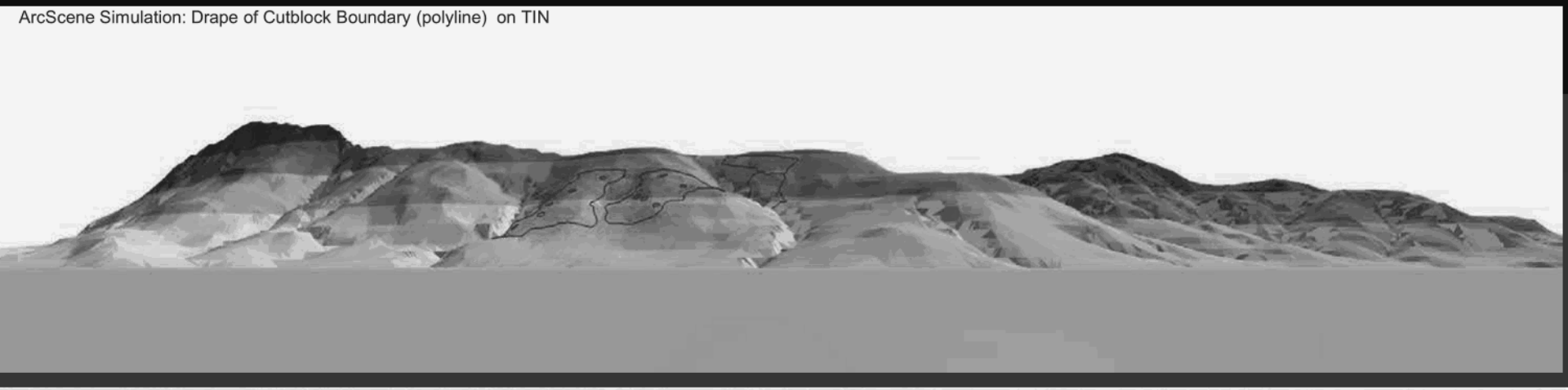
ArcScene Simulation: Cutblock Boundary (polyline) Extruded to Avg. Tree Height

Subject Landscape: Post Harvest Panorama

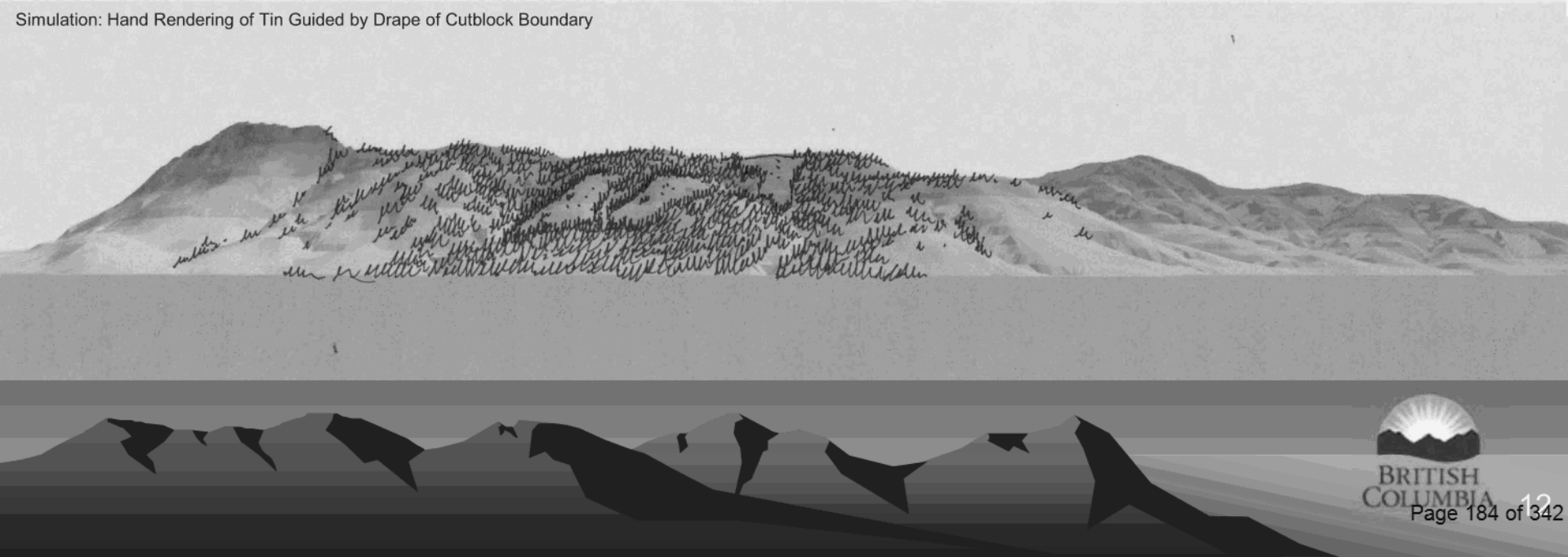
BRITISH COLUMBIA

ArcScene: Visual Impact / Design Assessment

ArcScene Simulation: Drape of Cutblock Boundary (polyline) on TIN



Simulation: Hand Rendering of Tin Guided by Drape of Cutblock Boundary



Google Earth

- Integrated with GIS: Design proposals (imported in kmz format) can be visualised on the GE landscape. This allows for a quick overview of their shape, size and visibility

- Limitations – accuracy / resolution diminishes with distance and as files are 2D, effect of tree heights can't be simulated

- Capable of visibility / line of sight analyses

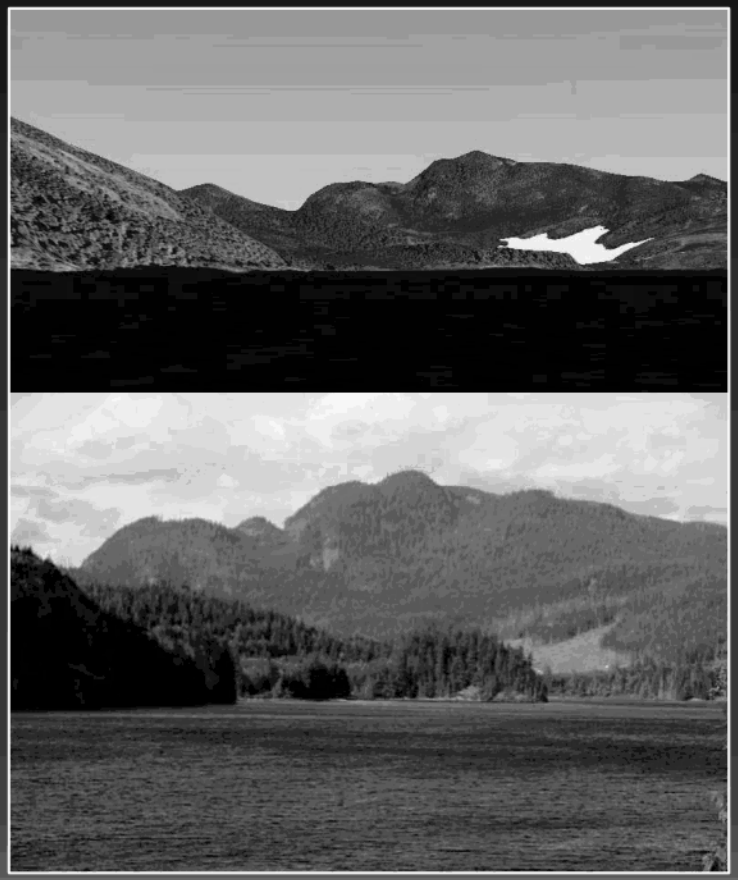


Photo Manipulation / Montage

Photo Manipulation

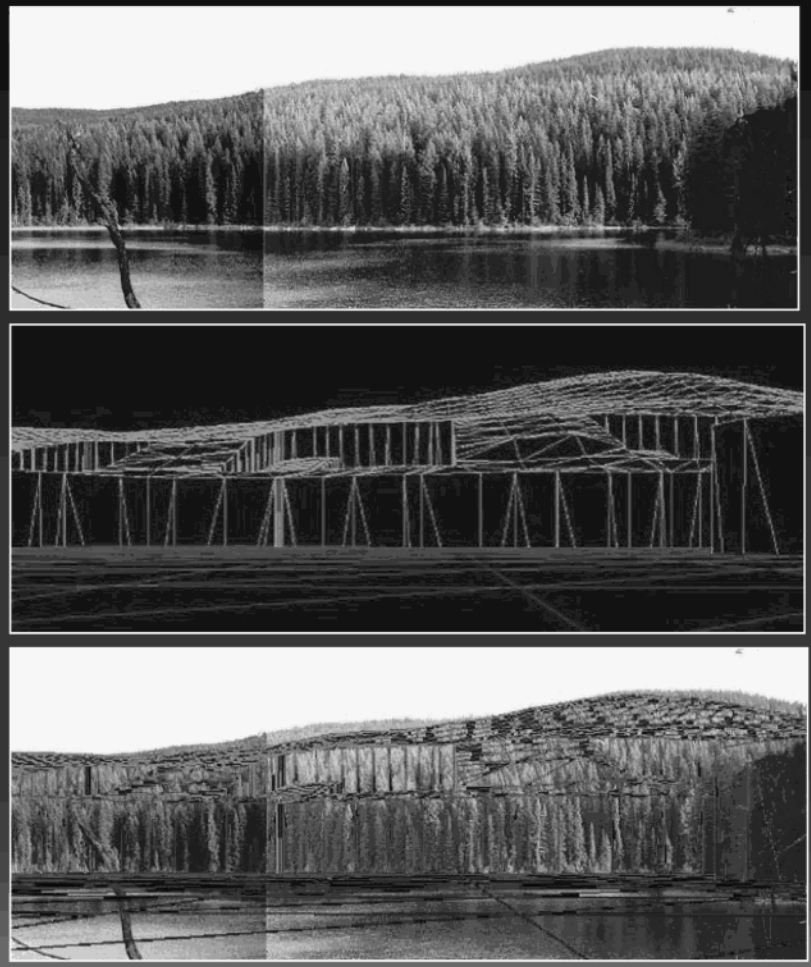
Photomontage

Photo Manipulation

Courtesy Olak Visual

Photo Manipulation

- Realistic / credible
- Excellent for communication of ideas / impacts in real world terms
- Requires skill and precise / controlled landscape photography



Courtesy CALP

Photomontage

Courtesy Timberline

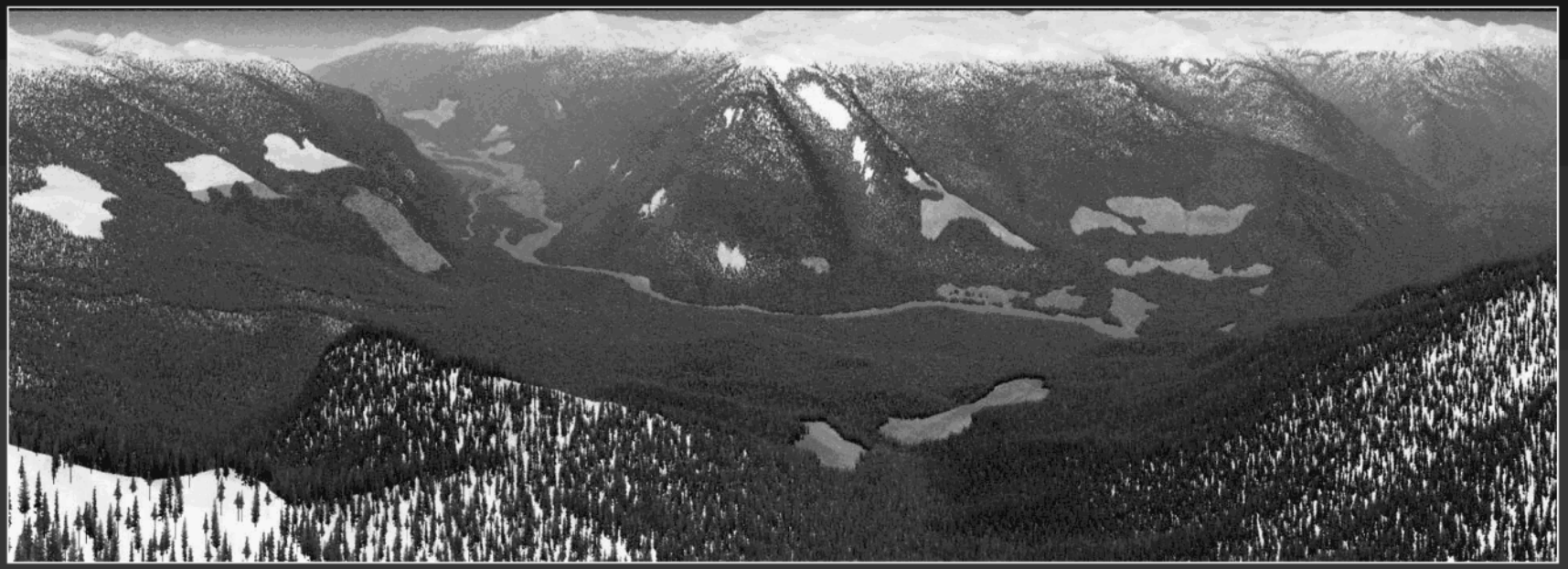
Near Photo Realism

Visual Nature Studio
3D Nature Ltd.

- Industry standard
- Accommodates large data sets
- Integration with GIS
- Import / export common file formats
- Extensive image / texture libraries
- Wide range of environmental effects
- Can populate model using stand characteristics (species / ht. / stocking)
- Accurate / credible output

Visual Nature Studio

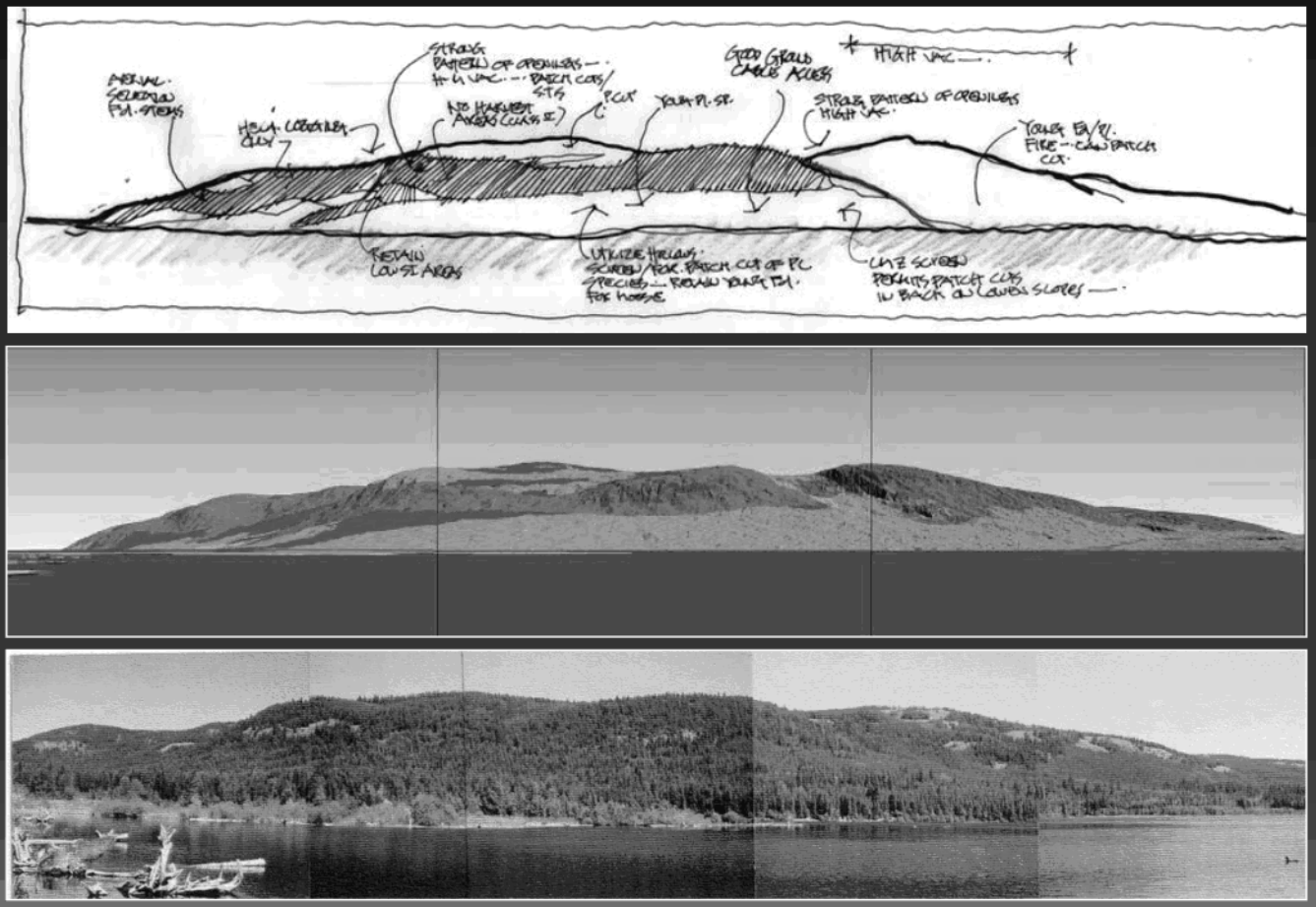
3D Nature Ltd.



Courtesy Resource Design Inc

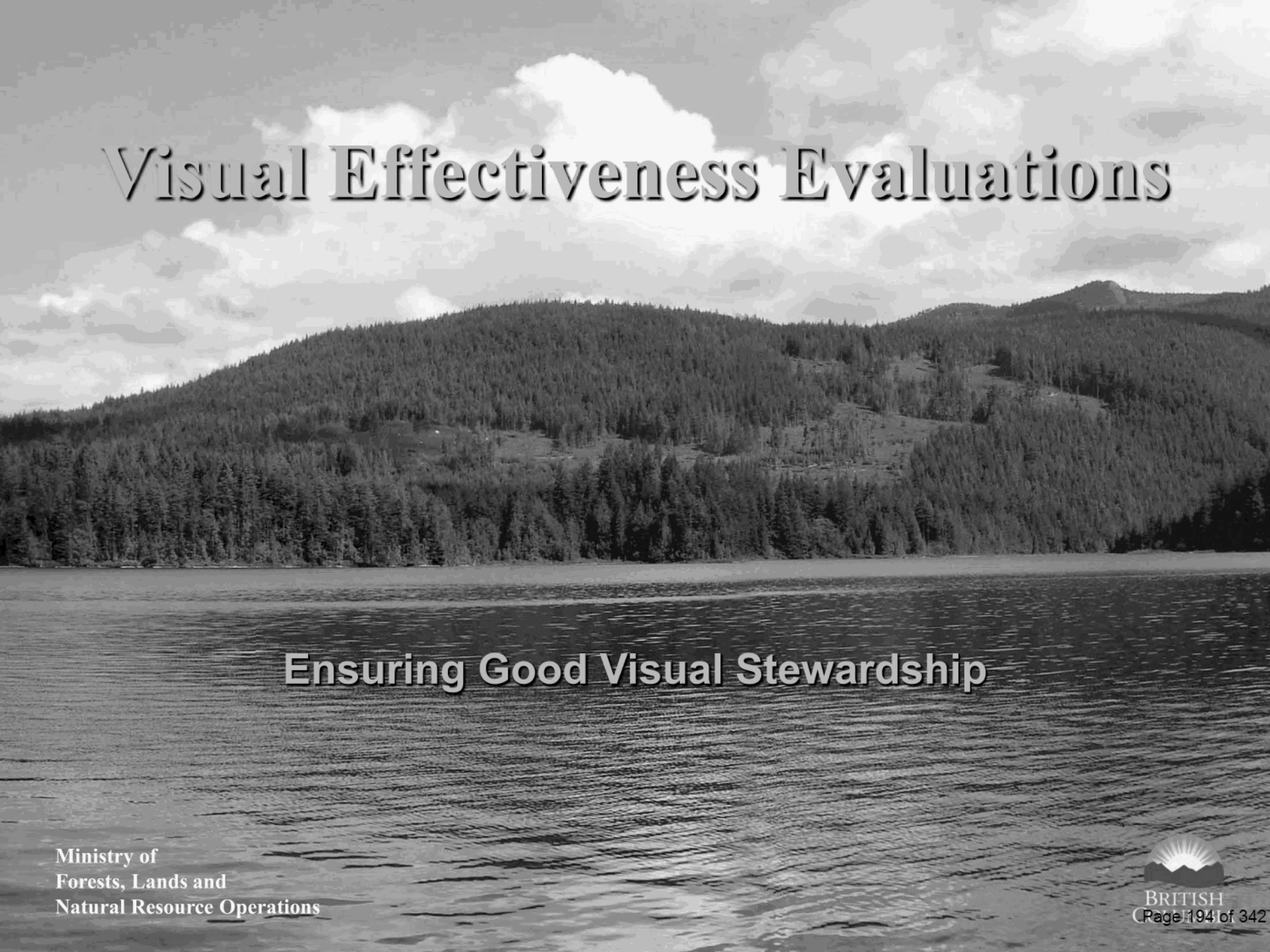
Visual Nature Studio

Use in the Landscape Assessment / Design Process

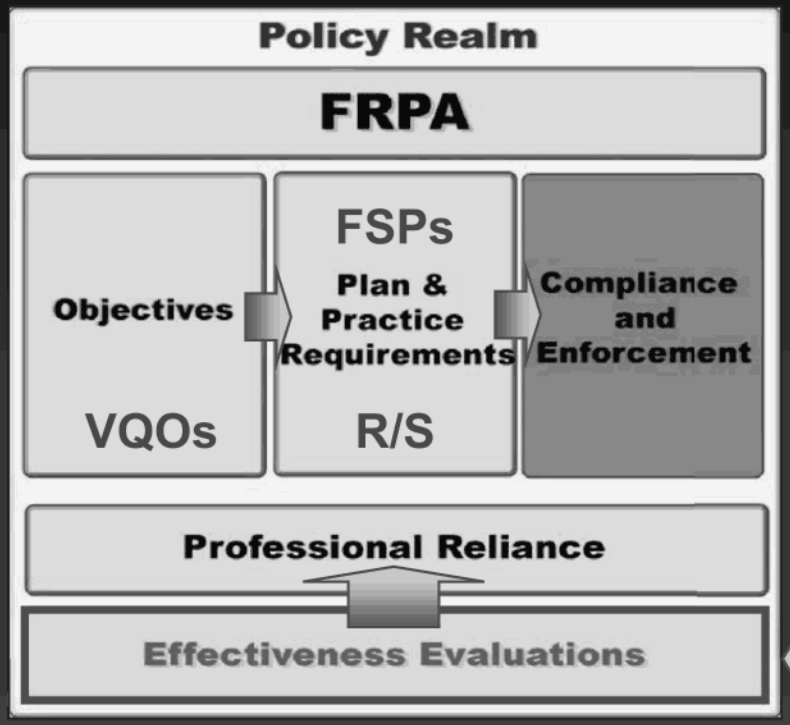


Summary

- A broad range of visual simulation methods are available for use. Some readily available (e.g. ArcGIS), some more specialised (e.g. VNS).
- Each varies in terms of accuracy and / or credibility of output, user friendliness, costs
- Choice of method(s) is often dependent on landscape sensitivity, audience, and the stage of the design / assessment process
- In areas of lower visual sensitivity / level of concern simple, readily available methods such as ArcScene can be useful tools for visual design and visual impact analyses.


Visual Effectiveness Evaluations
Ensuring Good Visual Stewardship
Ministry of
Forests, Lands and
Natural Resource Operations
BRITISH

One of the foundations of the *FRPA* functional architecture are Effectiveness Evaluations.



FREP
Forest & Range Evaluation Program

Forest and Range Evaluation Program

The MFLNRO Forest and Range Evaluation Program (FREP) was developed to collect high quality, science-based information for decision making and in support of continuous improvement of forest practices, policies, and legislation in British Columbia.

Visuals is one of the 11 values included under the FREP umbrella.

Effectiveness Evaluations

What are they?

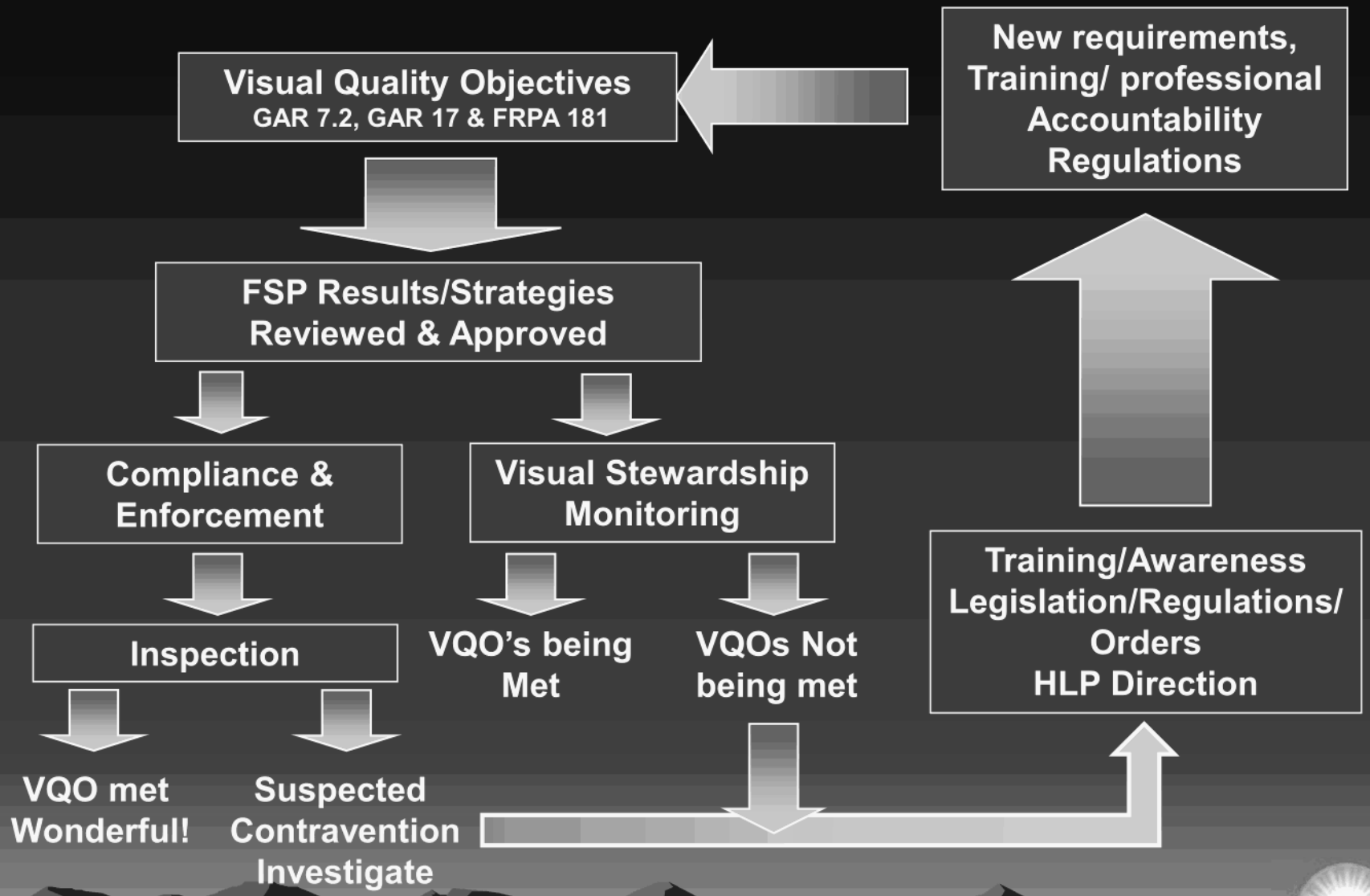
Effectiveness evaluations are about determining if forest and range values are being managed sustainably.

To determine this, an effectiveness evaluation must look at outcomes and trends over time.

Goal:

In the case of visual quality, the goal is to determine if the FRPA model is effective at managing and protecting the visual resource and to determine if there are implementation issues with respect to forest policies, practices and legislation.

Visual Continuous Improvement Cycle



Visual Quality Evaluation Protocol

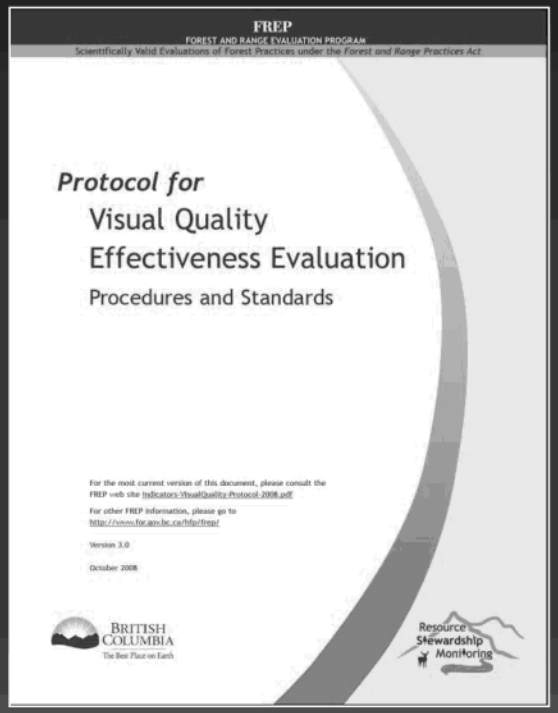
2004

FOREST SERVICE
BRITISH COLUMBIA

Forest Practices Board

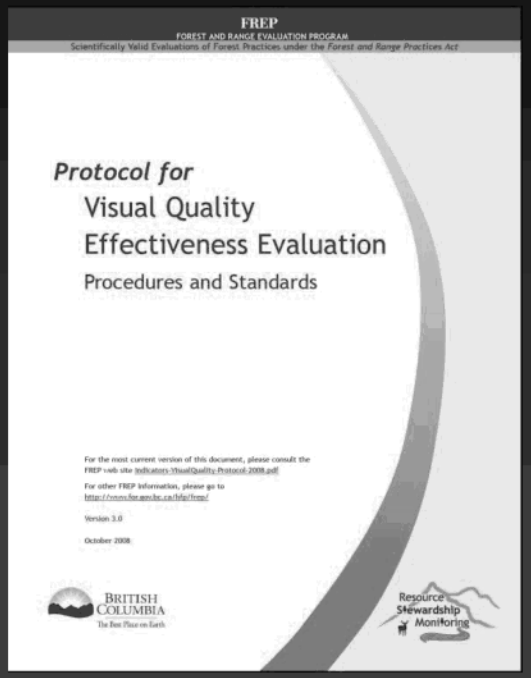
Calypso Consulting

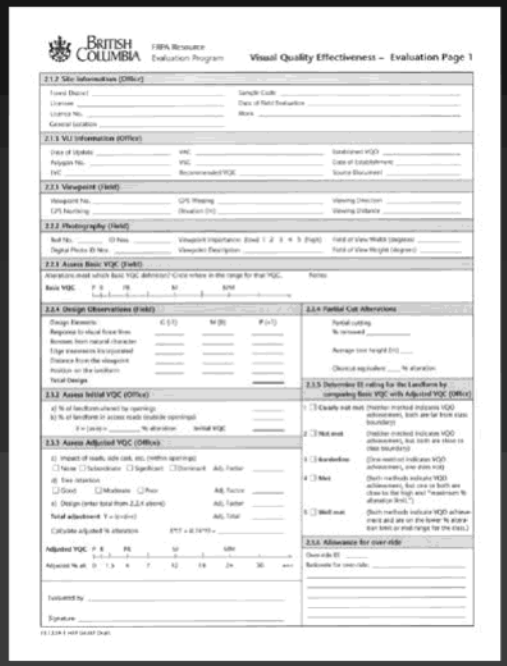
UBC



BRITISH COLUMBIA

Visual Quality Evaluation Procedures





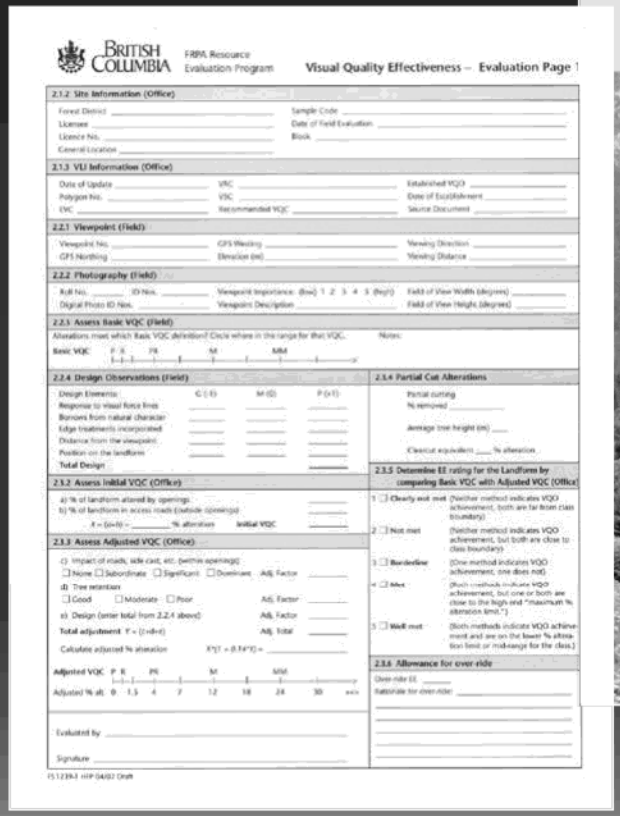
Draft document released July 2004.

Protocol published 2007

The procedures & standards were developed to be completed from a single viewpoint and are applied to a randomly-chosen block or blocks. This allows for detailed data collection that can then be rolled up by district, region and/or province.

Visual Quality Evaluation Procedures

Procedures field tested on Coquihalla Highway June 2004



BRITISH COLUMBIA FRPA Resource Evaluation Program — Visual Quality Effectiveness – Evaluation Page 1

2.1.2 Site Information (Office)

Forest District / Licensee / Licence No. / General Location / Sample Code / Date of Field Evaluation / Block

2.1.3 VLI Information (Office)

Date of Update / Polygon No. / EVC / VAC / VSC / Recommended VQC / Established VQO / Date of Establishment / Source Document

2.2.1 Viewpoint (Field)

Viewpoint No. / GPS Northing / GPS Westing / Elevation (m) / Viewing Direction / Viewing Distance

2.2.2 Photography (Field)

Roll No. / ID Nos. / Digital Photo ID Nos. / Viewpoint Importance: (low) 1 2 3 4 5 (high) / Viewpoint Description / Field of View Width (degrees) / Field of View Height (degrees)

2.2.3 Assess Basic VQC (Field)

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

Basic VQC P R PR M MM

2.2.4 Design Observations (Field)

Design Elements:	C (-1)	M (0)	P (+1)
Response to visual force lines			
Borrows from natural character			
Edge treatments incorporated			
Distance from the viewpoint			
Position on the landform			
Total Design			

2.3.4 Partial Cut Alterations

Partial cutting
% removed
Average tree height (m)
Classical equivalent ___ % alteration

2.3.2 Assess Initial VQC (Office)

a) % of landform altered by openings
b) % of landform in access roads (Latitude (coverage))
X = (a+b) = ____ % alteration — Initial VQC

2.3.5 Determine 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.)

2.3.3 Assess Adjusted VQC (Office)

c) Impact of roads, side cast, etc. (within openings)
☐ None ☐ Subordinate ☐ Significant ☐ Dominant — Adj. Factor
d) Tree retention
☐ Good ☐ Moderate ☐ Poor — Adj. Factor
e) Design (enter total from 2.2.4 above) — Adj. Factor
Total adjustment Y = [(-nd+e) — Adj. Total
Calculate adjusted % alteration X'(Y + (0.74*Y)) = ____

2.3.6 Allowance for over ride

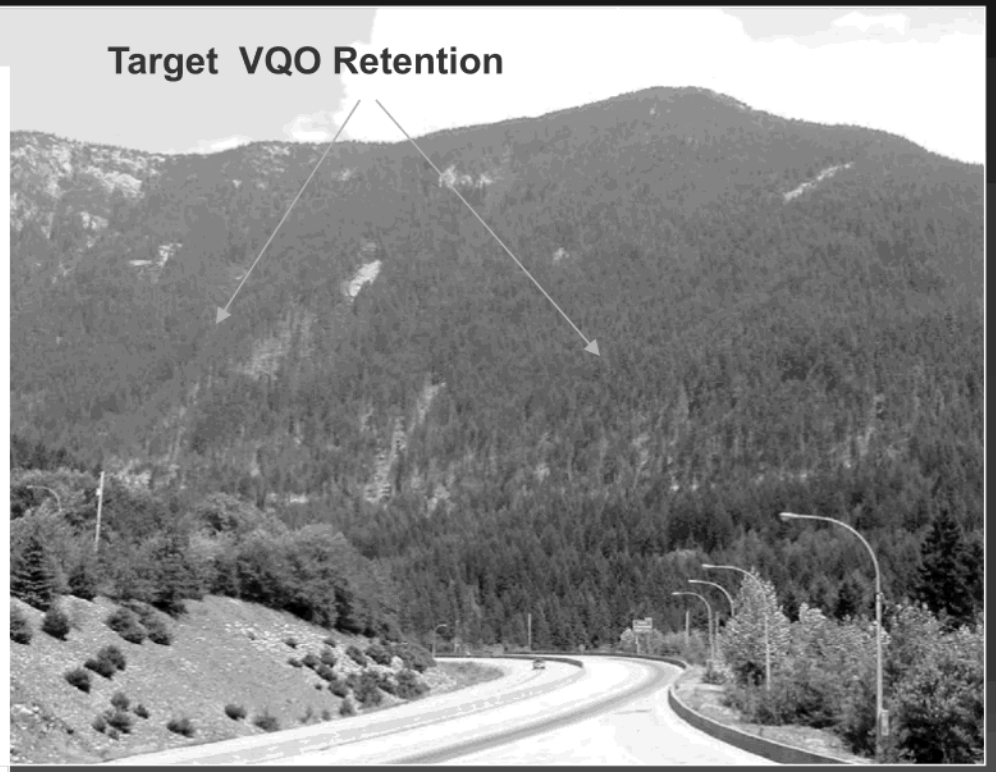
Over-ride EE
Rationale for over-ride

Adjusted VQC P R PR M MM

Adjusted % alt. 0 1.5 4 7 12 18 24 30 xxx

Evaluated by
Signature

IS1239-1 HFP 04/02 Draft



Achieved Condition = Retention

Visual Evaluation Procedures

The visual evaluation approach assesses each landform using two independent measures:

1. the basic definition for each category of alteration (VQO) is evaluated through an ocular 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.

Step 1: Assess Basic Definition (Field)

Alterations meet which Basic VQC definition?

Circle where in the range for that VQC:

Basic VQC:

P R PR M MM

|----|----|----------|----------|----------|----------|----------|----------|

is very easy to see, and is (A) large in scale and natural in its appearance, or (B) small to medium in scale but with some angular characteristics;

Step 2: Numerical & Design Assessments

2.2.4 Design Observations (Field)

Design Elements:	G (-1)	M (0)	P (+1)
Response to visual force lines			X
Borrows from natural character			X
Edge treatments incorporated			X
Distance from the viewpoint			X
Position on the landform			X
Total Design			+ 5

2.3.2 Assess Initial VQC (Office)

a) % of landform altered by openings: 7.3

b) % of landform in access roads (outside openings): 0

$X = (a+b)$ = 7.3 % alteration Initial VQC: M

2.3.3 Assess Adjusted VQC (Office)

c) Impact of roads, side cast, etc. (within openings)

☐ None ☒ Subordinate ☐ Significant ☐ Dominant Adj. Factor: +1

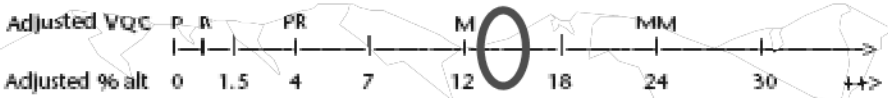
d) Tree retention

☐ Good ☐ Moderate ☒ Poor Adj. Factor: 0

e) Design (enter total from 2.2.4 above) Adj. Factor: + 5

Total adjustment Y = (c+d+e) Adj. Total: + 6

Calculate adjusted % alteration $X*(1 + 0.14*Y)$ = 13.4



Determine Final EE Rating by comparing the VQO derived by ocular assessment with that derived through the numerical/ design assessment.

Established VQO M

2.3.5 Determine 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)

Exercise #1-5

Conduct an EE on this opening.

Exercise #1- 5

Step 1: Carry out ocular assessment.

Mark your position on line using VQO definitions

Basic VQC:

P R PR M MM

|----|----|----------|----------|----------|----------|----------|----------|

Exercise #1- 5

Step 2: Analyse opening from an numerical & design perspective and fill in the form accordingly.

2.2.4 Design Observations
Response to Lines of Force "Poor".
Distance from the viewpoint 2.3 Km.

2.3.2 Assess Initial VQC
Initial % alteration 8.7%

Exercise #1-5

2.2.4 Design Observations (Field)

Design Elements:	G (-1)	M (0)	P (+1)
Response to visual force lines			X
Borrows from natural character			X
Edge treatments incorporated		X	
Distance from the viewpoint		X	
Position on the landform			X
Total Design			+3

2.3.2 Assess Initial VQC (Office)

a) % of landform altered by openings: 8.7

b) % of landform in access roads (outside openings): 0

X = (a+b) = 8.7 % alteration — Initial VQC: M

2.3.3 Assess Adjusted VQC (Office)

c) Impact of roads, side cast, etc. (within openings)

☐ None ☒ Subordinate ☐ Significant ☐ Dominant — Adj. Factor: +1

d) Tree retention

☒ Good ☐ Moderate ☐ Poor — Adj. Factor: -2

e) Design (enter total from 2.2.4 above) — Adj. Factor: +3

Total adjustment Y = (c+d+e) — Adj. Total: +2

Calculate adjusted % alteration — $X*(1 + 0.14*Y)$ = 11.1

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

8.7x [1+ (0.14 x 2)] =11.14%

Exercise #1- 5

Established VQO PR

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

How effective have we been at Managing Visuals under FRPA?

Two projects:

- Standard FREP sampling results 2013
- FSP R/S Review 2013

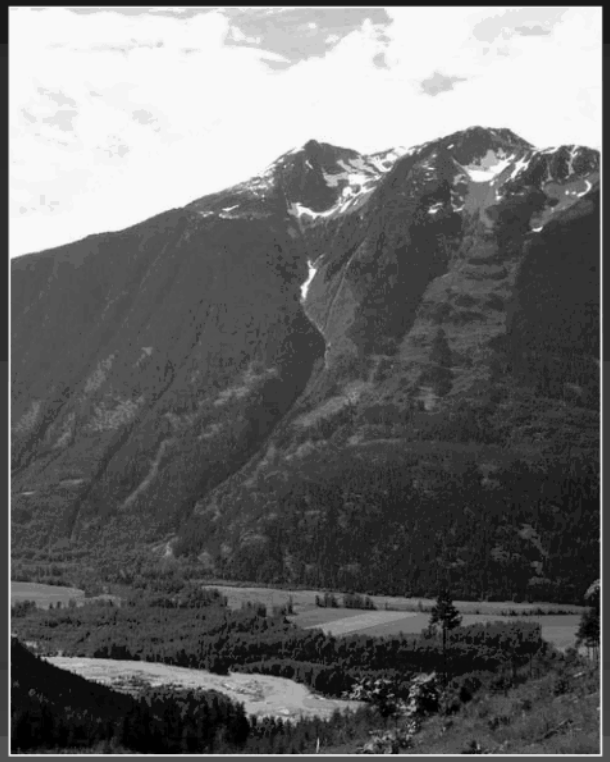
How effective are we at Managing Visuals under FRPA?

Between 2006 and 2008 FREP sampled 234 landforms within 15 participating districts. Between 2009 and 2012 FREP sampled 407 landforms within 22 districts.

Data was collected by district staff and contractors.

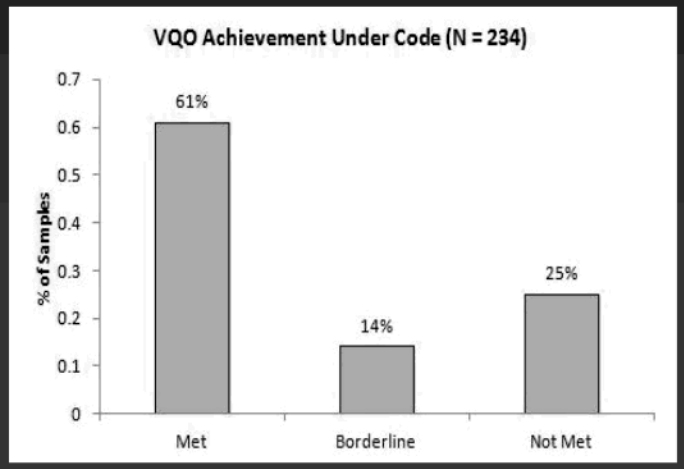
All samples were vetted through a quality assurance process.

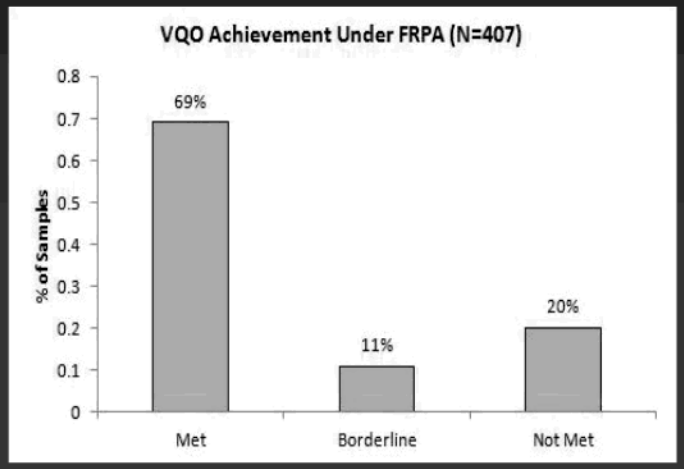
Analysis was carried out using Excel graphing tools.



Question 1:

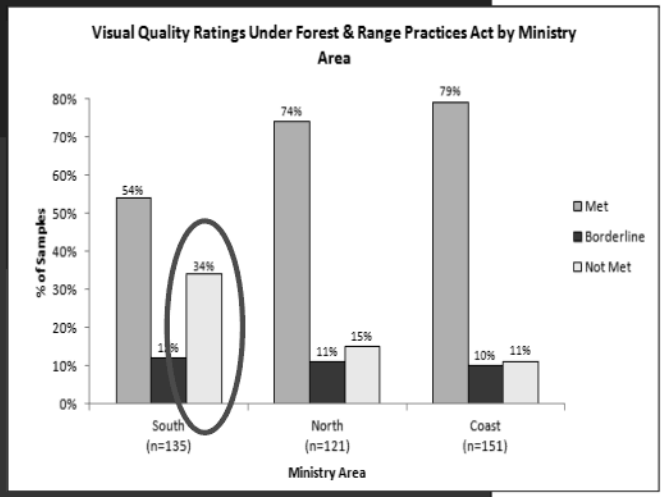
To what extent are VQOs achieved under the Forest and Range Practices Act?

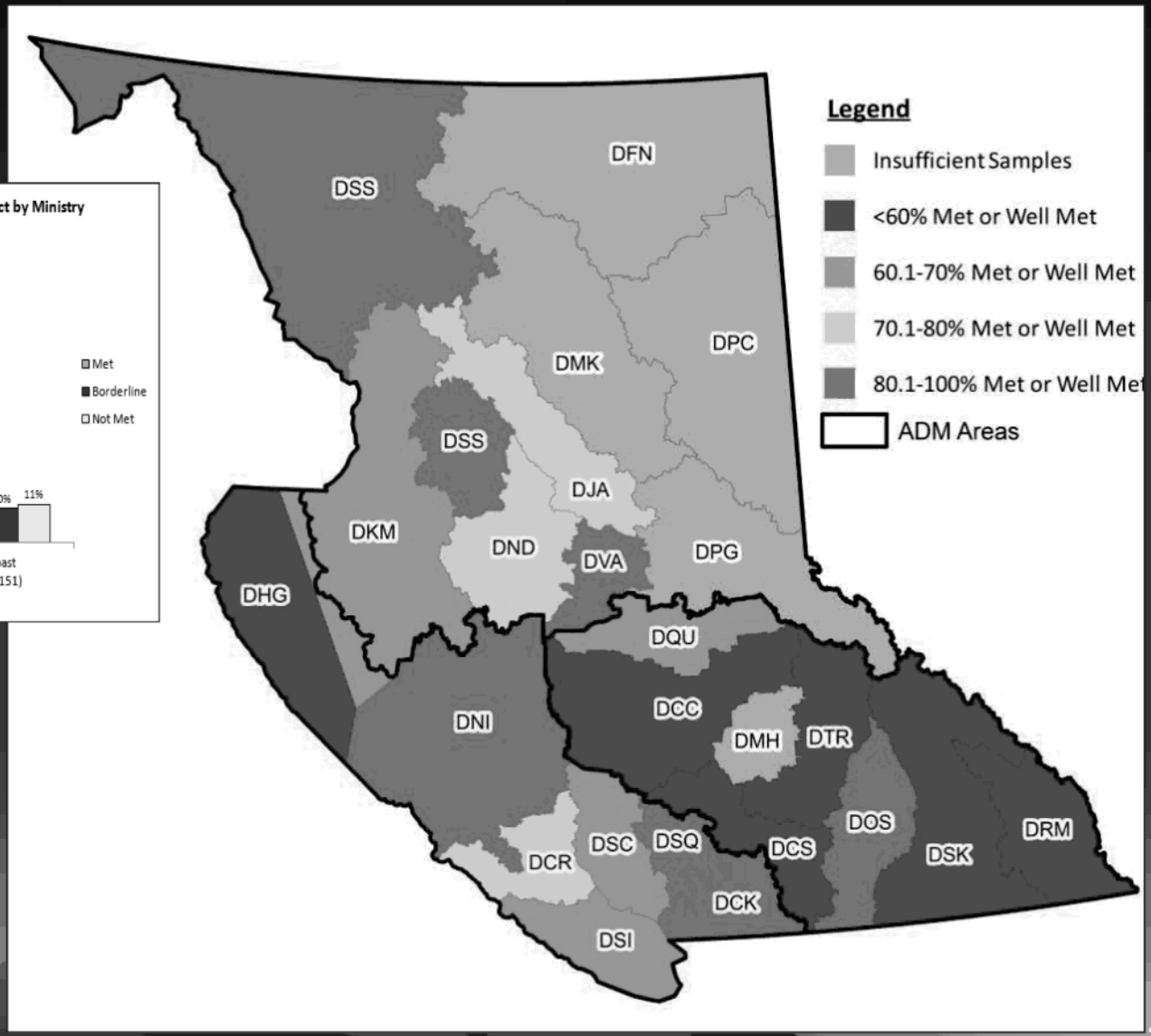




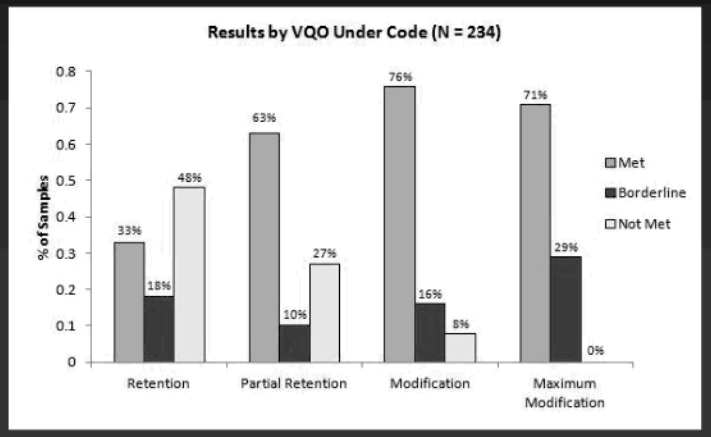
Observation: Under the Code VQO's were achieved on average 61% of the time. Under FRPA the achievement rate is 69% provincially. Under FRPA, 20% of landforms still fail to achieve the VQO.

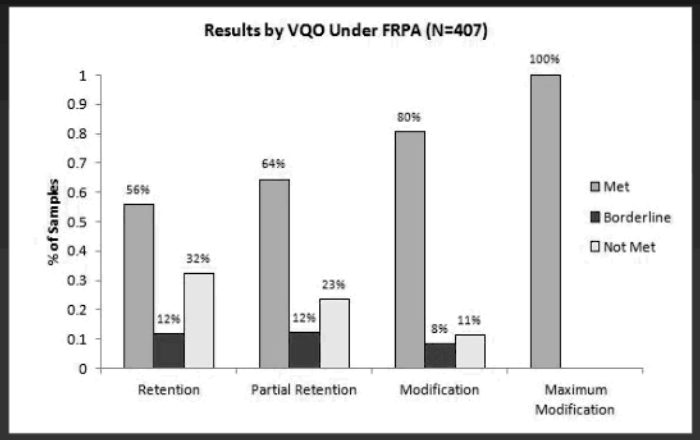
Map showing proportion of FRPA samples meeting VQOs by District 2013





Question 2:
Does VQO achievement vary by VQO class?

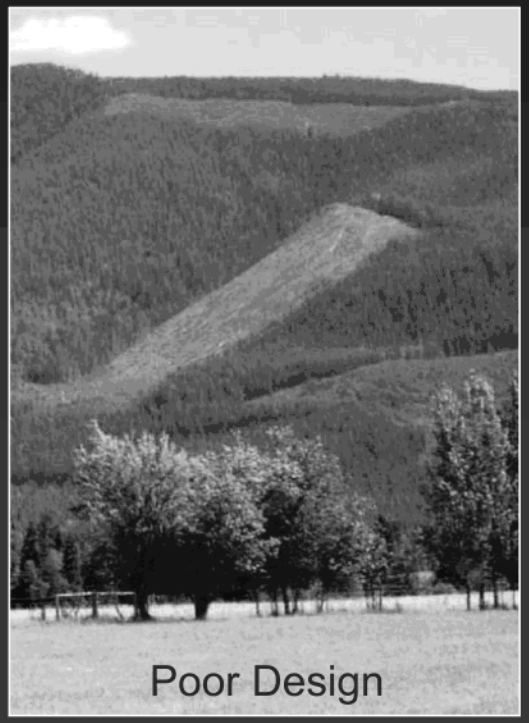


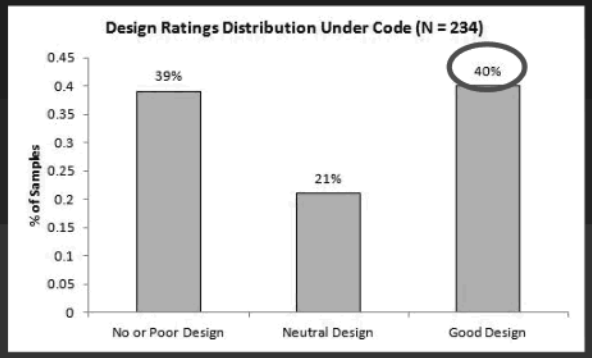


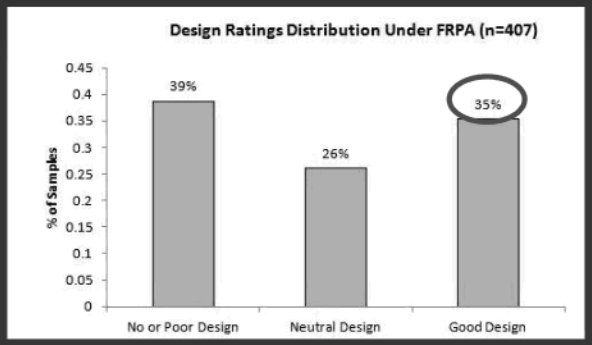
Observation: VQOs on highly sensitive landscapes with a VQO of "retention" were achieved 33% of the time under the Code. This has improved to 56% under FRPA. The Partial Retention VQO results have remained essentially the same - 63% under the Code and 64% under FRPA.

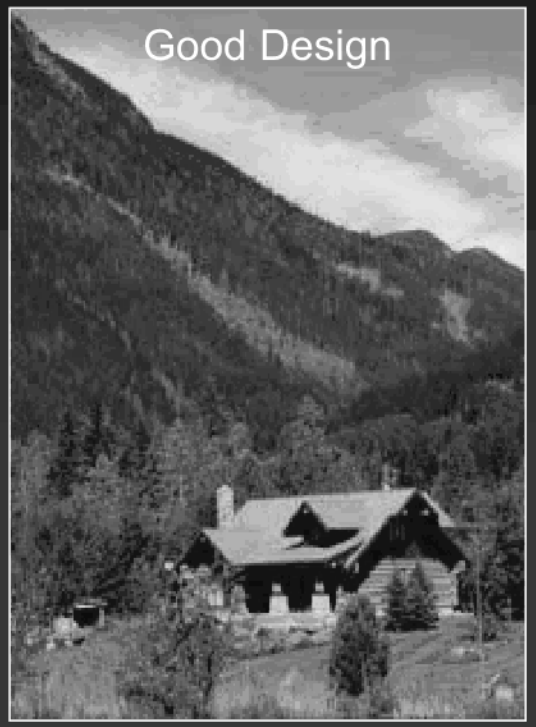
Question 3:

To what extent are visual design concepts and principles being applied in harvest planning?







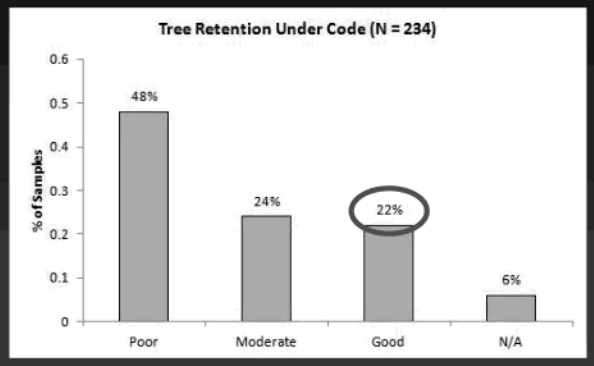


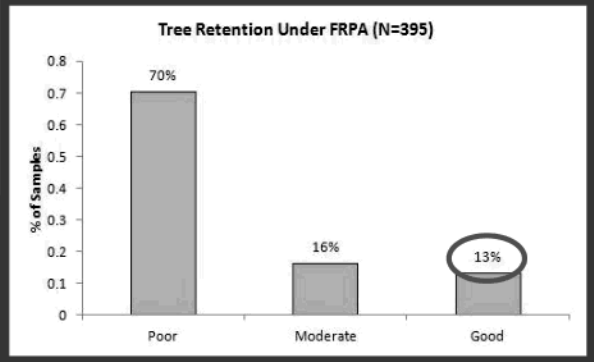
Observation: Forest alterations sampled under the Code exhibited good visual design 40% of the time. Under FRPA good visual design was observed 35% of the time. The quality of design has actually dropped under FRPA.

Question 4:

What levels of tree retention are being implemented within harvest openings to achieve VQOs?

In-effective Retention





Effective Retention

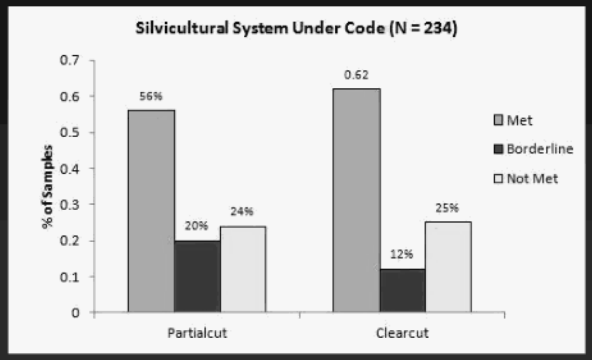
Observation:

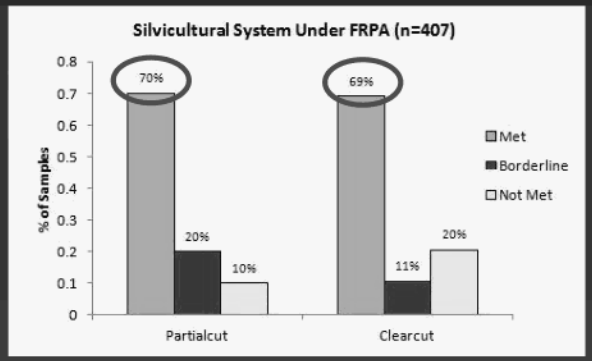
Under the Code, good tree retention (22% and greater) were present in 22% of the cut blocks sampled. Under FRPA, the amount of good tree retention fell to 13%. Samples did not contain enough retention to offset the dominance of block size.

Question 5:

How effective are the various silv systems at achieving VQOs?

Partial Cut stand meeting a Partial Retention VQO





Clearcut openings meeting a Partial Retention VQO.

Observation:

Under the Code, VQOs were achieved 56% of the time when using partial cutting and 62% of the time when using clear cutting. Under FRPA, the achievement of VQOs is about equal using either clear cut (69%) or partial cut (70%) systems.

Evaluation Take Home Messages

Visual Management has not improved appreciably under FRPA.

- While consistency with VQOs is up 8% provincially, this is offset by the fact that 75% (18 of 24) Districts are performing below the 80% success level.
- Under FRPA Retention VQOs are achieved 56% of the time while Partial Retention is achieved 64% of the time. This suggests that VQOs are not being achieved on our most sensitive landscapes.
- Application of visual design principles are dropping. Good visual design evident under the Code has slipped from 40% to 35% under FRPA.
- Under FRPA the amount of good tree retention has dropped from 22% to 13%. The majority of samples did not contain enough visual retention to offset the dominance of block size.

Forest Stewardship Plan Review 2013

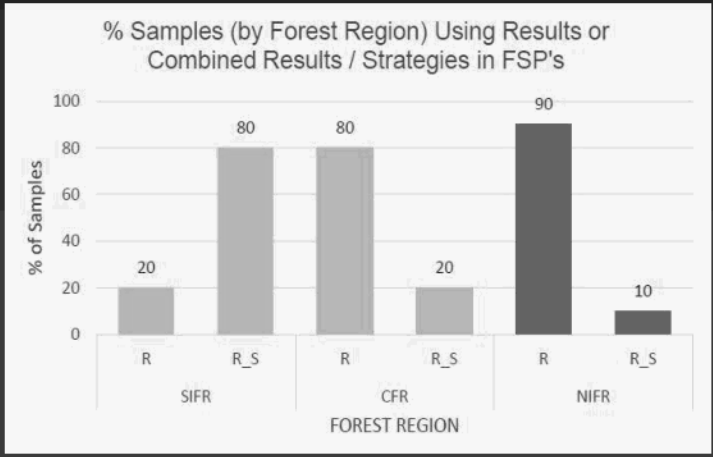
In addition to looking at whether VQOs had been achieved, FREP also examined the visual component of 30 approved FSPs provincially. (10 samples per region)

The goal was to determine if the approved Visual Quality Results/Strategies were measureable and verifiable and would lead to consistency with objectives as is required by the FRPA S.5.

Question 1:

Does the FSP content employ Results, Strategies or a combination of both?

Results:



63 % of the FSPs contained result statements that committed to achieving the Established VQOs.

37% of the FSP's contained strategy statements.
E.g. a Visual Impact Assessment will be completed.

Question 2:

Are the Results /Strategies consistent with the Objectives set by Government?

Results:

The majority (83%) of the FSPs sampled include R/S's consistent with OBSG for Visual Quality and Visual Quality Objectives.

Five samples (17%) include R/S's inconsistent with the EVQO's.

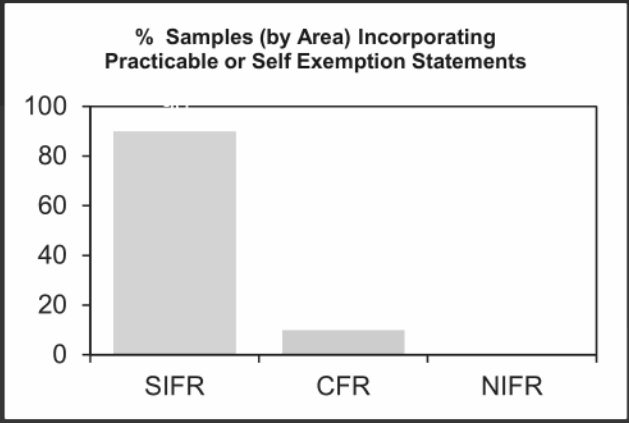
40% percent (4 samples) of the Southern Interior R/S's were found to be inconsistent, in contrast to none (0%) in the Northern Interior, and 10% (1 sample) in the Coast Area sample sets

Question 3:

Does the FSP content contain a practicable statement, and if so, does it include the required information as per FRPA Bulletin #25?

Results:

33% (10 samples) include a practicable statement in some form,
67% (20 samples) did not contain practicable statements.



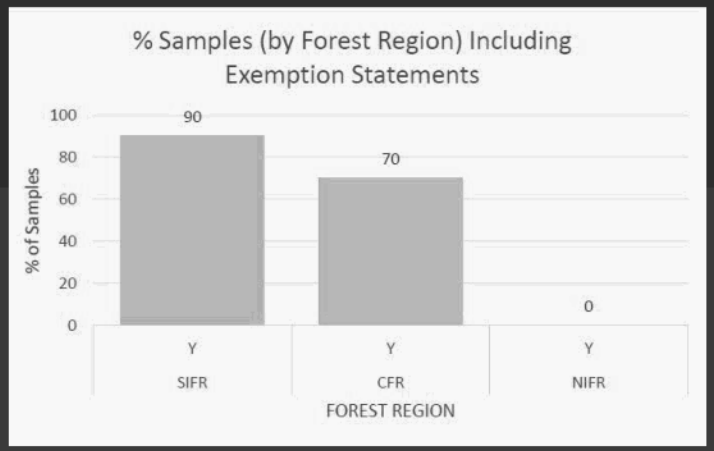
90% of the practicable statements occurred in the Southeast. There was one sample on the Coast and none in the North.

Of the FSP's including practicable statements, none were consistent with ADM direction issued June 15, 2010 or FRPA General Bulletin #25 dated July 21st, 2011.

Question 4:

Does the Result/Strategy include a statement that
i) limits the application of the R/S or
ii) exempts the proponent from being consistent with the VQO?

Results:

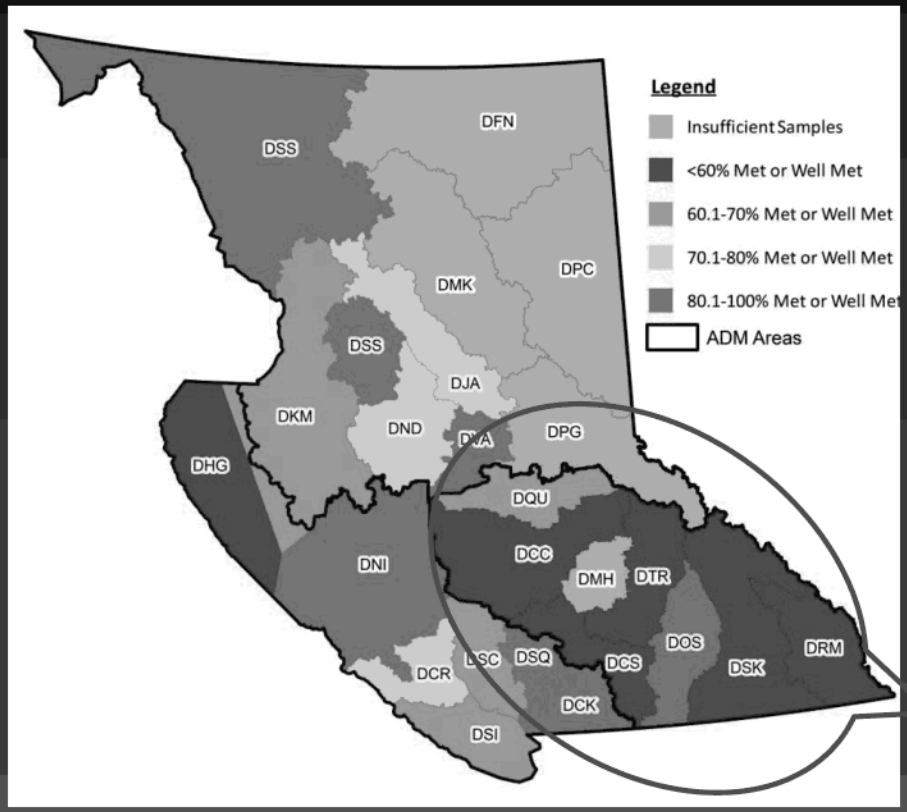


53% of the FSP's reviewed include statements exempting the proponent from the VQO if certain broad conditions exist.

These statements were observed in 90% of the Southern Interior FSPs, 70% of the Coast FSPs and 0% of the Northern Interior samples

Note: There are no provisions in FRPA that enable Operational Exemptions. Use of these clauses is illegal, circumvents the amendment process and makes C&E actions difficult.

Conclusion



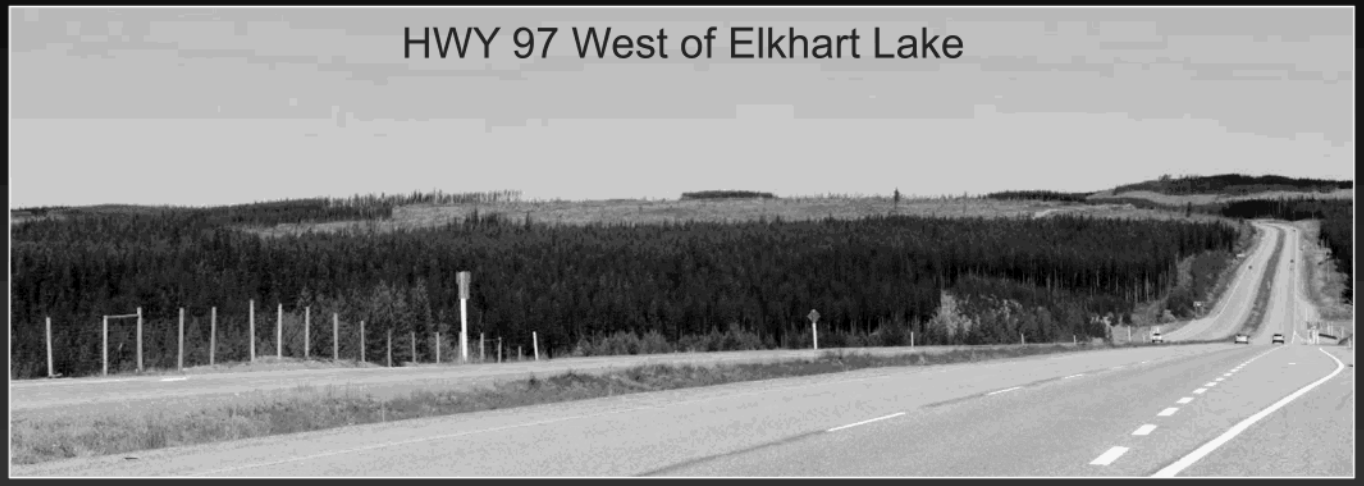
FREP Monitoring found…

that there is a strong correlation between those districts in which self exemptions are prevalent and those identified with poor FREP results.

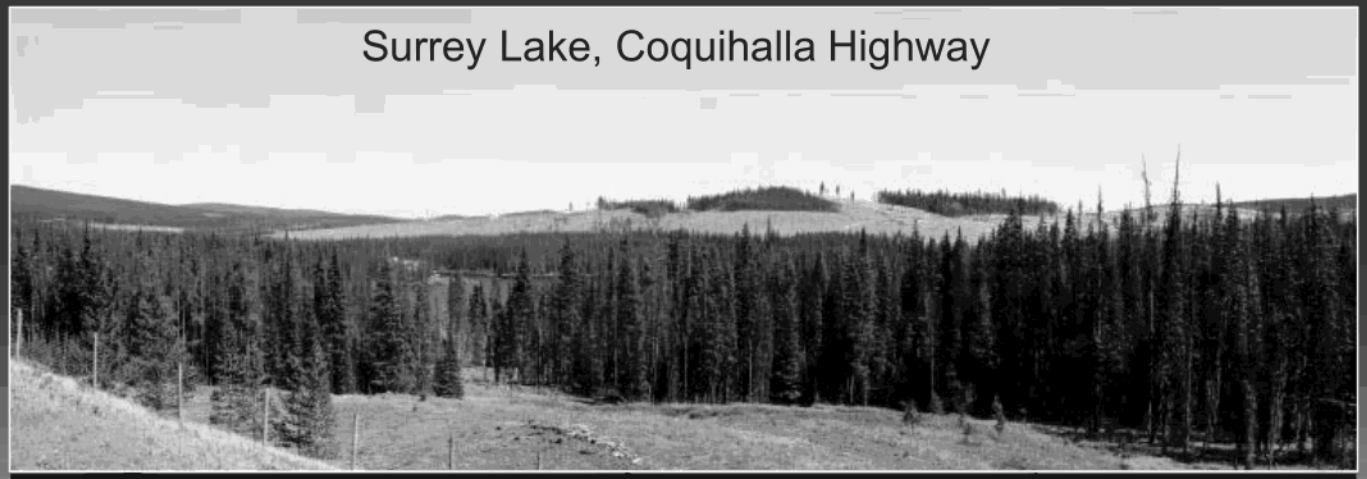
Self exemption wording is present in Coast FSPs but does not appear to be used to the same degree as the Southern Interior.

90% of FSPs in the Southern Area contain operational exceptions, 5 of 7 districts achieve VQOs less than 60% of the time

Visual Results Associated with Operational Exceptions

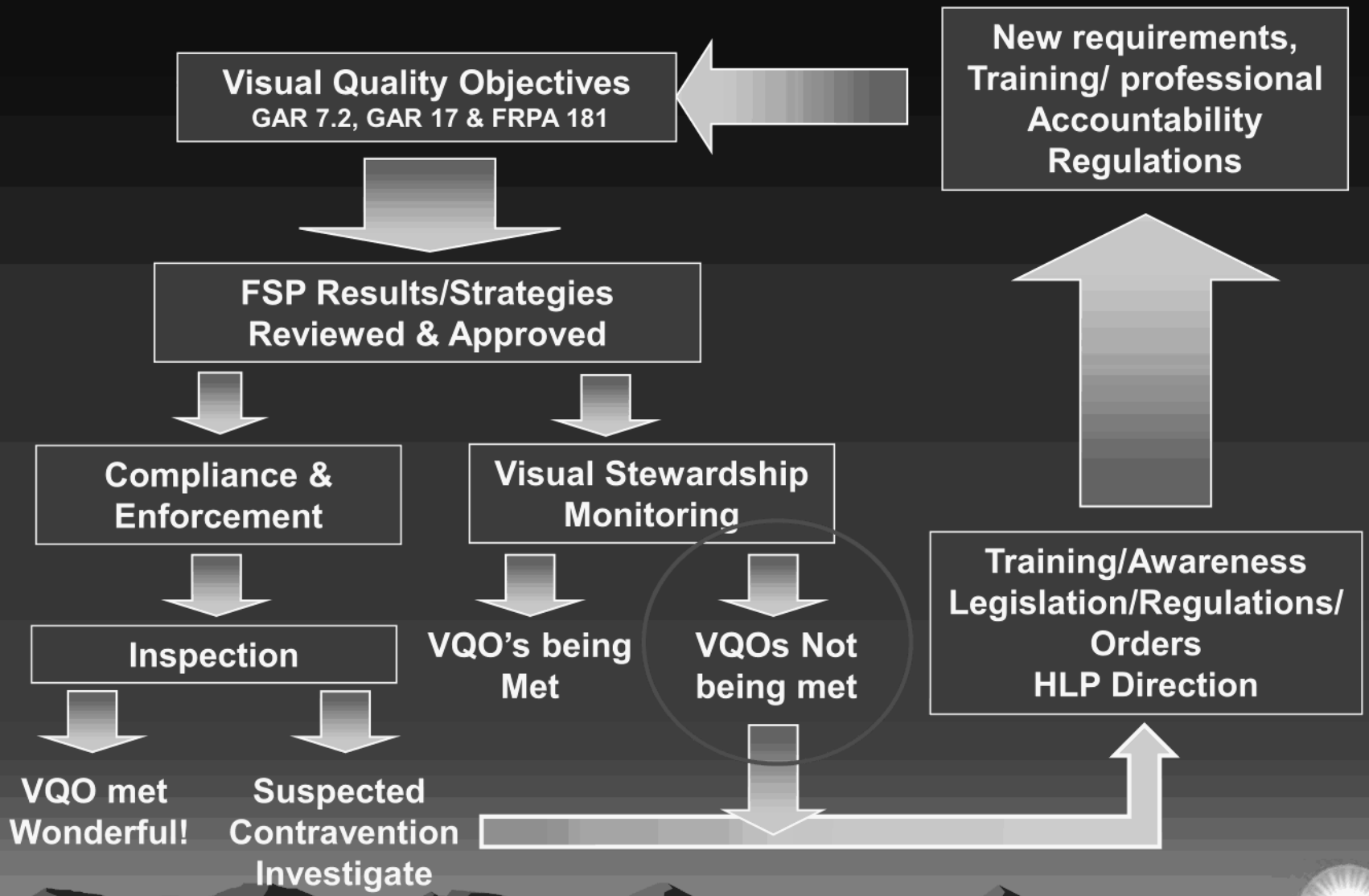


VQO for area **Partial Retention**. Result: **Maximum Modification**



VQO for area **Retention**. Result: **Maximum Modification**

Moving Forward



Moving Forward

Actions:

1. The Visual program has launched this training program to address the gaps in competency of forest professionals and is working with the ABCFP to develop a practice reminder document for those responsible for visual quality work.
2. Visual Resource Stewardship Monitoring will continue on an annual basis to track trends in visual management, report on progress, and make recommendations for improved practices.
3. Some tweaks to Legislation are proposed to improve clarity, reduce administrative complexity and hold professionals more accountable.
4. FSPs will be carefully reviewed to tighten up visual results/strategies.


Thank You

ASSOCIATION OF BC FOREST PROFESSIONALS

The Role of Professional Judgment in Visual Resources

Kamloops, Castlegar, Nanaimo & Prince George, March 2017

Michael Larock, RPF
Director of Professional Practice and Forest Stewardship

Case 1: Significant Viewpoint
Allegation, OTBH, Contravention

ASSOCIATION OF BC FOREST PROFESSIONALS

- Known Scenic Area
- Remote site or Significant Public Viewpoint
- Site Plan and harvesting
- Contravention of 21(1)

Failure to meet results in FSP

Financial Penalty

What is sufficient knowledge?

What is a standard of care?

DDM Determination July 2011

ASSOCIATION OF BC FOREST PROFESSIONALS

The Plan for our Conversation

1 The Public Trust agreement

2 Professional judgement, advice & direction

3 Cases in Point

4 In the Cross hairs


ASSOCIATION OF
BC FOREST PROFESSIONALS
SOCIAL LICENCE
SL = authority + credibility + trust

Social Licence

ASSOCIATION OF BC FOREST PROFESSIONALS

SL = authority + credibility + trust

- Authority:

FRPA / Forest Act / Workers Comp / *Foresters Act*

- Credibility:

  Science, Professional Independence

  Social Expectations, goals, values, management

  Member of regulated profession

What is the Public Trust?

ASSOCIATION OF BC FOREST PROFESSIONALS

Exclusive Practice

+

Self-Regulation

=

Competent Practice

+

Public Interest

ASSOCIATION OF BC FOREST PROFESSIONALS

Change is Evolution

ASSOCIATION OF BC FOREST PROFESSIONALS

Professional Reliance

"the practice of accepting and relying upon the decisions and advice of professionals who accept responsibility and can be held accountable for the decisions they make and the advice they give."

(Guideline: Definition of Professional Reliance. September 2004)

ASSOCIATION OF BC FOREST PROFESSIONALS

Professional Reliance

PR = Rely on judgment x Accountable

Judgment = direction, advice, decisions

(knowledge, training, experience)

Accountable = answerable beyond employment

(member of regulated profession)

Professional Reliance

ASSOCIATION OF BC FOREST PROFESSIONALS

- ✓ Judgement Advice and Direction are governed under the Foresters Act
- ✓ Applied consistent with other legislations

Bylaws - professional practice determined by members

- 11 Code of Ethics
- 12 Professional Practice Standards

Guidelines – resolutions by ABCFP council

ASSOCIATION OF BC FOREST PROFESSIONALS

Professional Requirements

11 Code of Ethics:

rules in making moral choices

12 Standards of Professional Practice:

measures of performance

ASSOCIATION OF BC FOREST PROFESSIONALS

Professional Requirements

Consistent with other legislation, regulations and policies

- Regulation "*written instructions from a QRP*"
  - the professional cannot undermine this requirement
- Obligation (knowledge, science, standards, rights,…)

Case 2: Unsound Professional Assessments FPB IRC195

ASSOCIATION OF BC FOREST PROFESSIONALS

- Known Scenic Area
- Landscape or landform
- FSP: "Design" Harvest and Roads to meet VQO

FPB: Failed to meet results in FSP due to assessment and engagement

What is Measurable or Verifiable?

FPB IRC 195

ASSOCIATION OF BC FOREST PROFESSIONALS

Practice of professional forestry

(*Foresters Act)*

1. Verbs: advise, direct, prepare, assess, supervise, audit, monitor, plan
2. Scope: respecting forests, forest lands, forest resources, forest ecosystems
3. Specialized education, knowledge, training and experience
4. Non-inclusive list examples that constitute the practice of professional forestry

Case 3: Errors in Work

CBC: Logging violations cut through scenic mountainside in Port Alberni - twice

Case 3: Errors in Work

ASSOCIATION OF BC FOREST PROFESSIONALS

- Known Scenic Area; multiple issues
- Assessing suitable Expertise (assessment of the reasonableness of the work)
- Harvesting multiple blocks

Was there an assessment of the reasonableness of the professional work?

FPB SIR 46 Port Alberni 2016

ASSOCIATION OF BC FOREST PROFESSIONALS

SL = authority + credibility + trust

11 Code of Ethics: rules in making moral choices

- 3.2 professional principles ahead of employment
- 3.3 to follow the law and seek a balance
- 3.7 practice in those areas if competent
- 4.6 keep informed in field of practice
- 5.5 inform employer of actions detrimental

ASSOCIATION OF BC FOREST PROFESSIONALS

SL = authority + credibility + trust

12 Standards of Professional Practice: measures of performance

- 12.2 Competence :
  - knowledge, complete & correct, duty of care standard,
  - Measure verify
  - Professional standard of care
- 12.5 Due diligence Standard

Finding Balance: Multiple Users & Interests

ASSOCIATION OF BC FOREST PROFESSIONALS

PR Failures

ASSOCIATION OF BC FOREST PROFESSIONALS

PR = Rely on judgement x Accountable

- *Professionals are not assigned to the task*
- *Judgment is constrained in the options*
- *Social decisions are already made*
- *Professionals lack knowledge*
- *Professionals do not act in the public interest*

Case 4: Forest Appeals Commission

ASSOCIATION OF BC FOREST PROFESSIONALS

- Finally some independent assessment

  easy to see; small to medium; rectilinear
- Purpose, Decisions, Expertise
  (conflict of interest)
- Professional Rationale

Did the FAC get it right?

FAC 2015-FRP-002(a)

Importance of professional independence

ASSOCIATION OF BC FOREST PROFESSIONALS

What your employer wants	independence qualities leading to social license
Strategic leadership	Science knowledge
FRPA stand obligations	Professional judgment
FA Revenue obligations	Providing perspective (time and size)
Office responsibilities	Innovation
Carry out employer interests	Professional guidance
Job responsibilities	Monitoring/applying effects of forest activities
Participate in team building	Verifying proper practices

Role of the Forest Professional

ASSOCIATION OF BC FOREST PROFESSIONALS

Value in Professional Service – Keeper of Forests

- Understanding of complex issues and environments
- Application of science
  - Interveners
  - Conservators
- Standard of Care
- Leadership

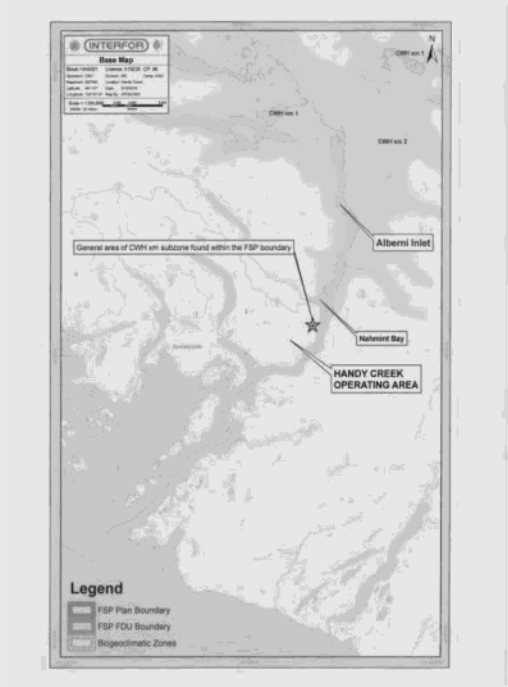
ASSOCIATION OF BC FOREST PROFESSIONALS

Office, Science, Tools of the Practitioner

- Documentation
- Signature and Designation
- Completeness
- Professional Rationale
- PR Evaluation Tool
- Peer expertise
- Guidance documents

Guide: Professional Rationale

ASSOCIATION OF BC FOREST PROFESSIONALS



A professional rationale is the reasoning behind the "advising, performing work, services or undertaking…

- ***Content: principles; options; logical; expected outcome; professional opinion***
- ***Communicated***

Protecting You

ASSOCIATION OF BC FOREST PROFESSIONALS

1. Maintain your competence

   Be sure of what you need to know

2. Know your Rights and Obligations

   Learn the legislations and expectations

3. Community of Practice

   Use your peers for review

4. Learn from the Mistakes of Others

   Follow results of forest practice

ASSOCIATION OF
BC FOREST PROFESSIONALS

For more information, contact the Professional Practice and Forest Stewardship Team

www.abcfp.ca

Visual Landscape Design

Concepts & Principles

Ministry of
Forests, Lands and
Natural Resource Operations

BRITISH COLUMBIA

Visual Landscape Design

Day 2 Workshop Objectives:

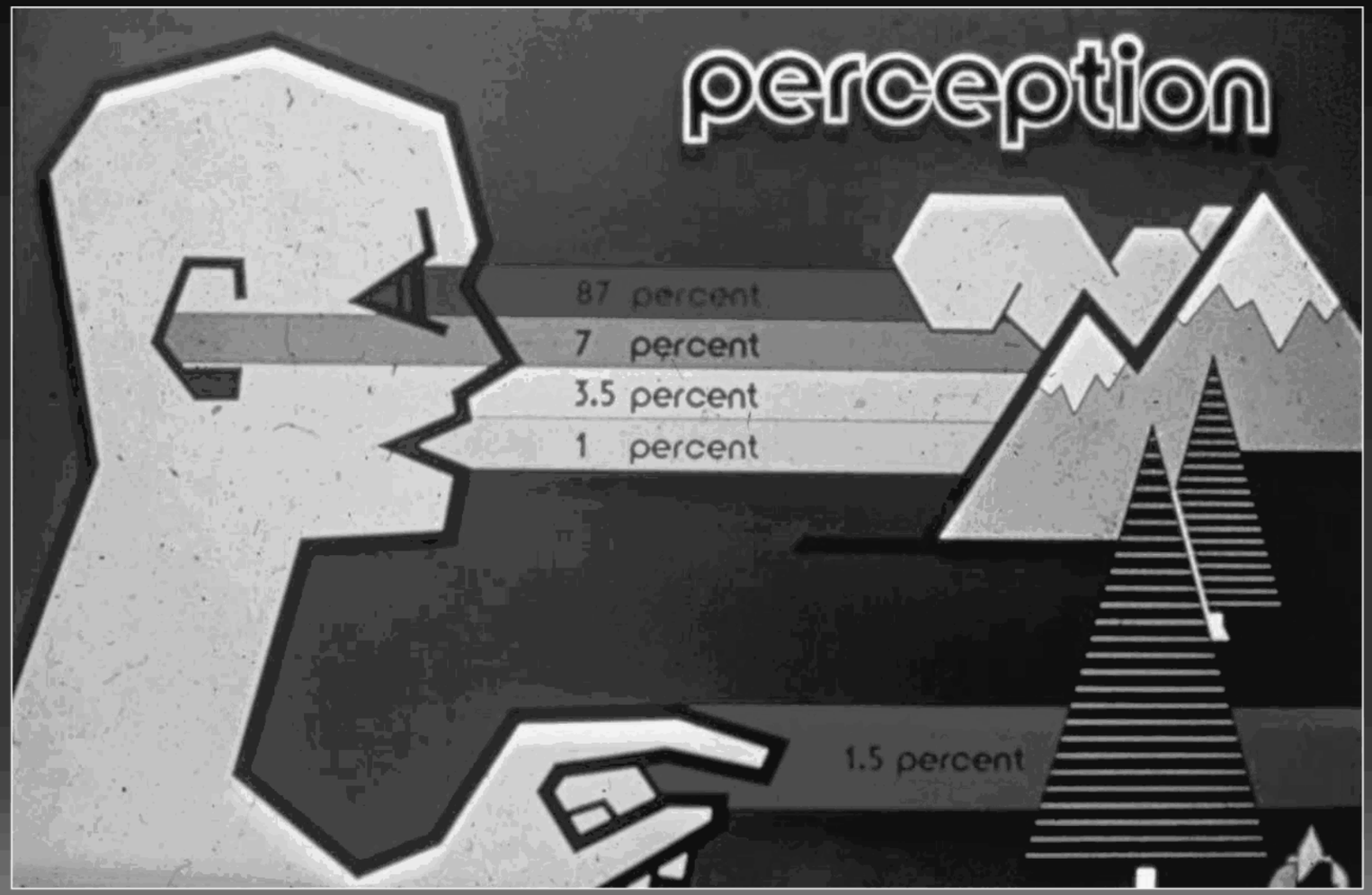
To gain an appreciation of:

- **Visual design principles and their application to the range of forest operations and activities which have a visual impact on the landscape.**

- **The way visual issues are integrated into the wider forest planning and design process. (Integrated Visual Design).**

Our Perception of the Landscape

87% of our perception of the landscape is visual.



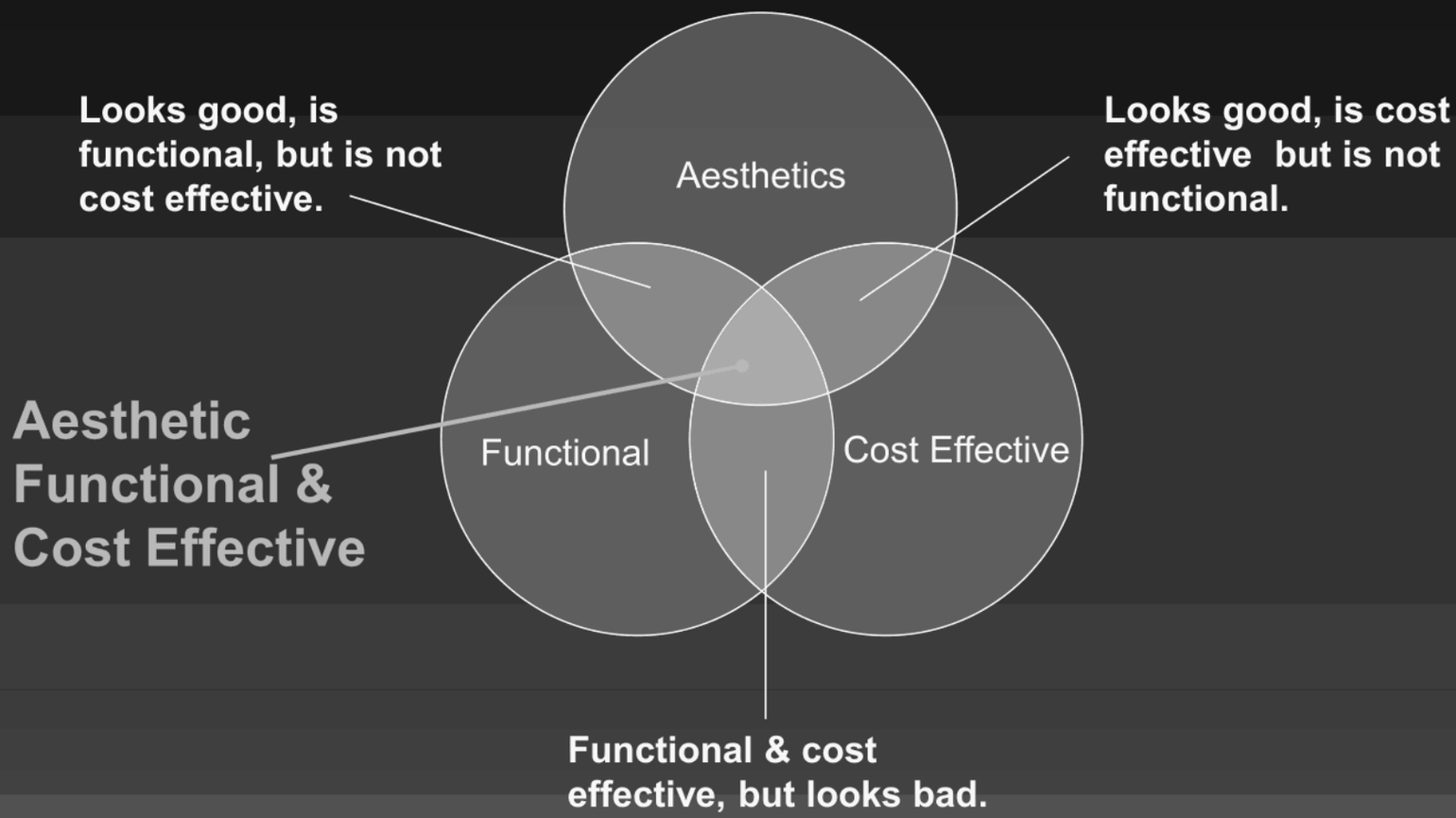
What is Visual Design?

Design is defined as:

- **the organization of a place in a way which reconciles the conflicting requirements of use while ensuring an aesthetic appearance.**
- **Design is the process which develops physical options to meet VQOs and forest management objectives.**

  It is a creative process that involves working with the visual patterns and forces of nature to guide changes to the landscape in ways that meet the needs of society, both aesthetically and economically

Design Strives to Strike a Balance



Visual Landscape Design

In order to implement VLD it is important to know:

- **what the management goals for a particular area of forest are.**
- **the concepts and principles that will result in an aesthetic appearance.**
- **what the process is for weaving these together.**

Differing Perspectives

Visual design principles provide a vocabulary that we can use to describe the landscape we see. This vocabulary can be used to describe the landscape as it currently is and for landscape change

Visual Landscape Design Process

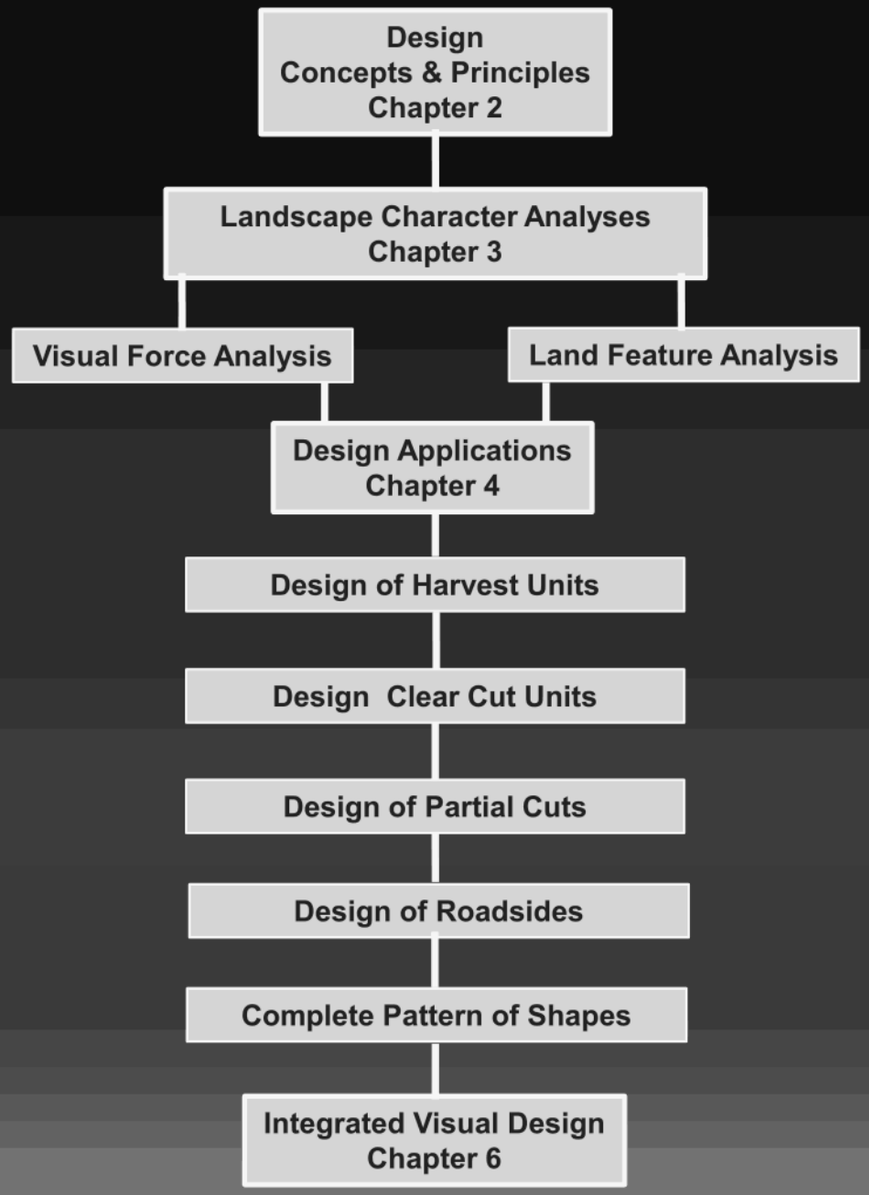
Visual design is a step by step process of:

- **collecting information on the landscape and forest**
- **analysing it; and**
- **testing out ideas as they might appear to the viewer.**

During the remainder of the day we will focus on walking you through this process.

Visual Landscape Design

To understand and implement design, it is imperative that you understand the vocabulary of design terms and understand how to use the various concepts and principles.

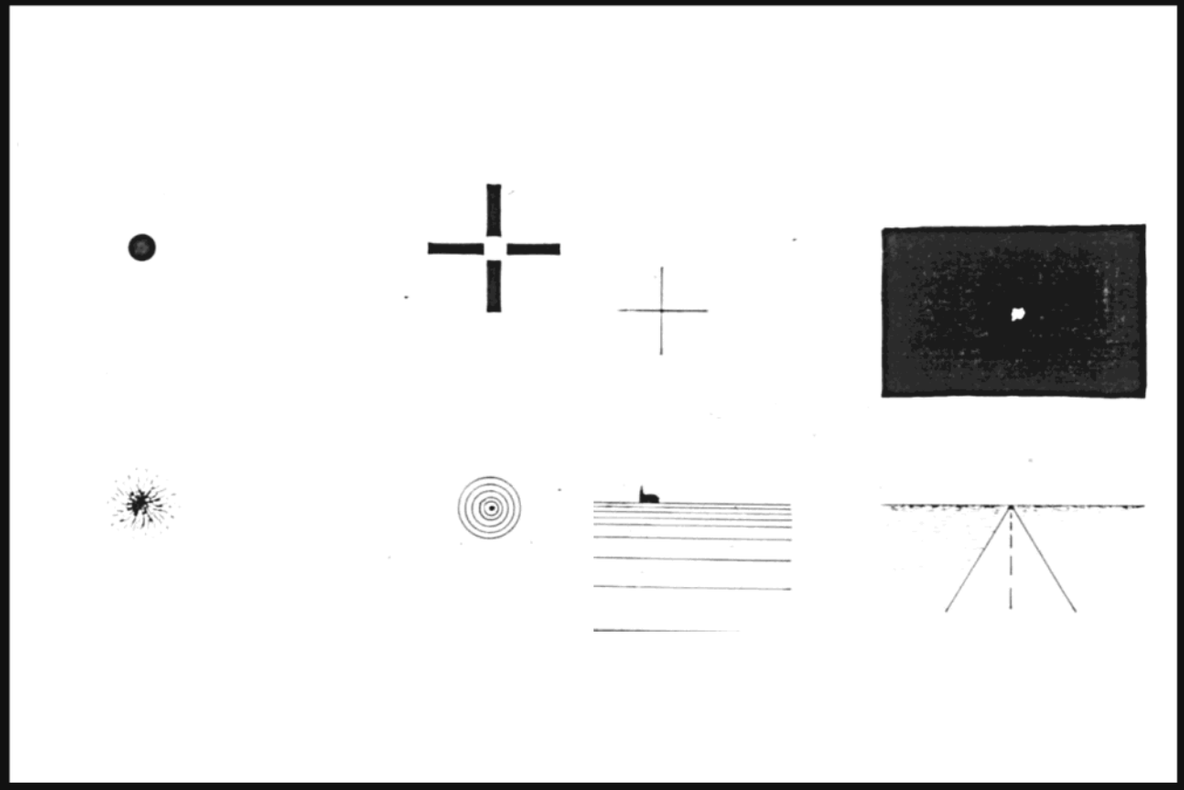


Page 6 of Design Training Manual

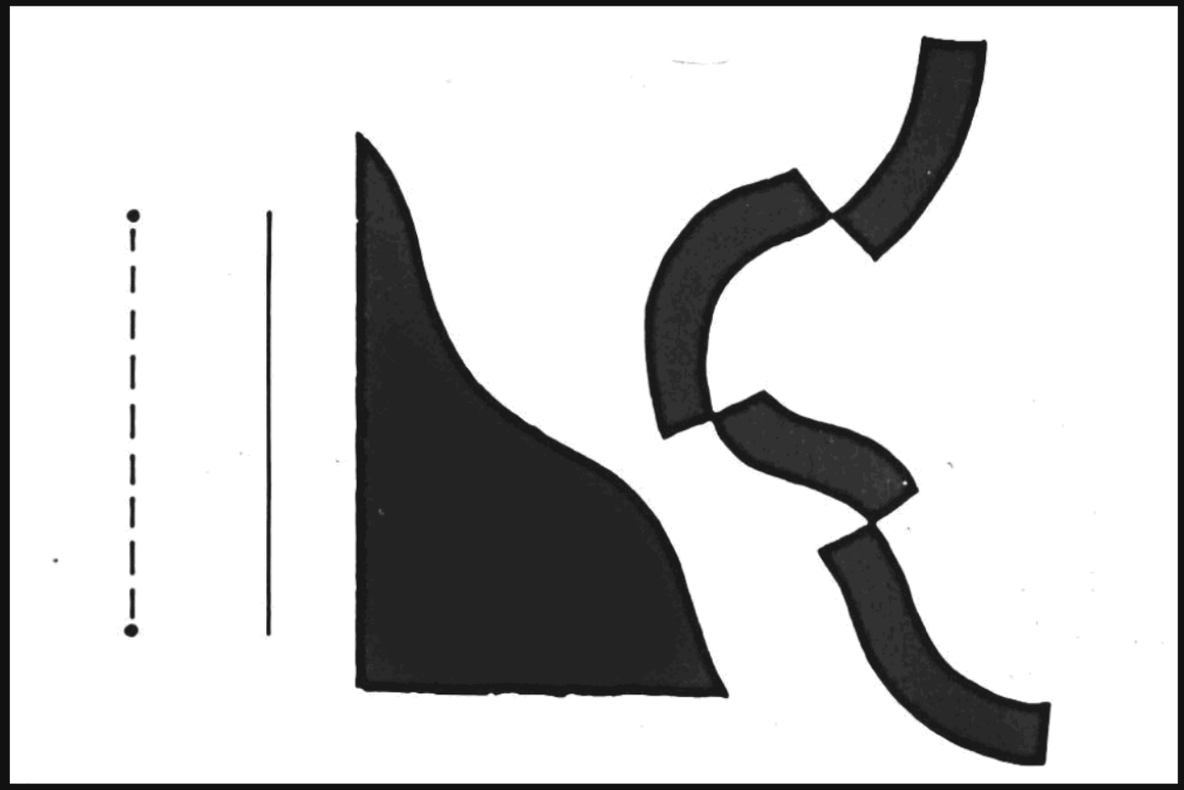
BASIC ELEMENTS

- Point
- Line
- Plane
- Solid Volume
- Open Volume

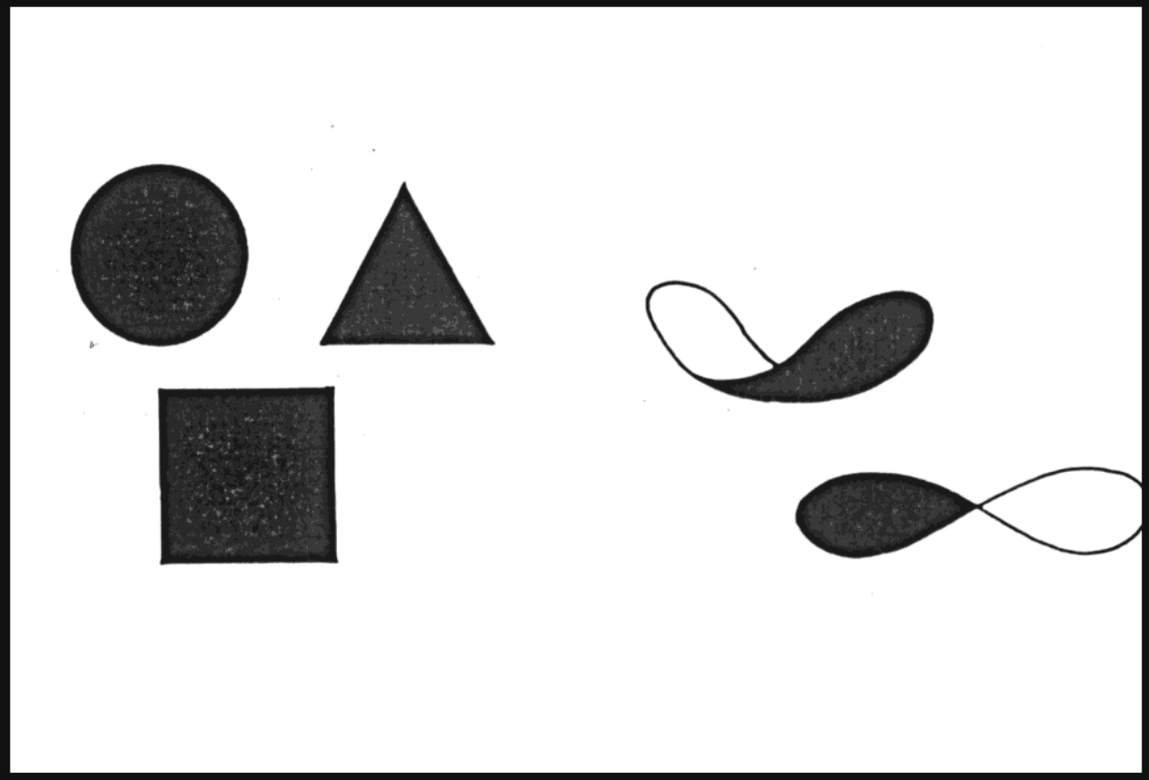
Point



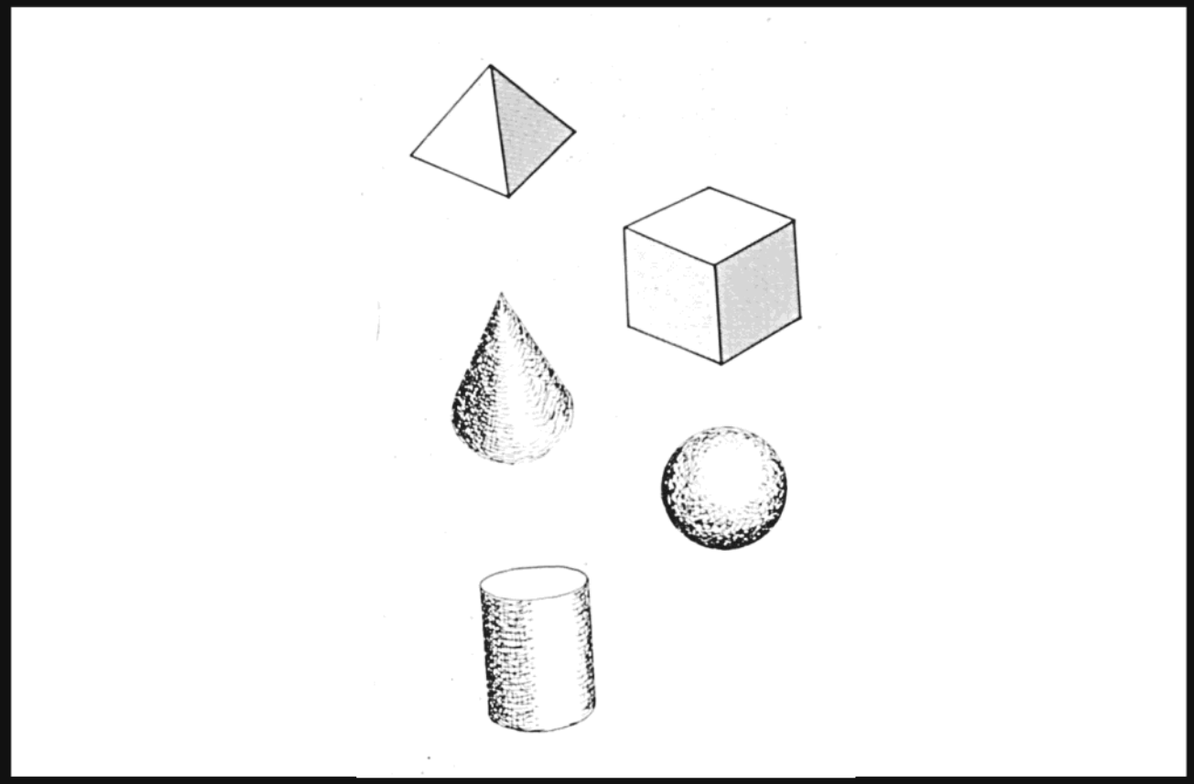
Line



Plane

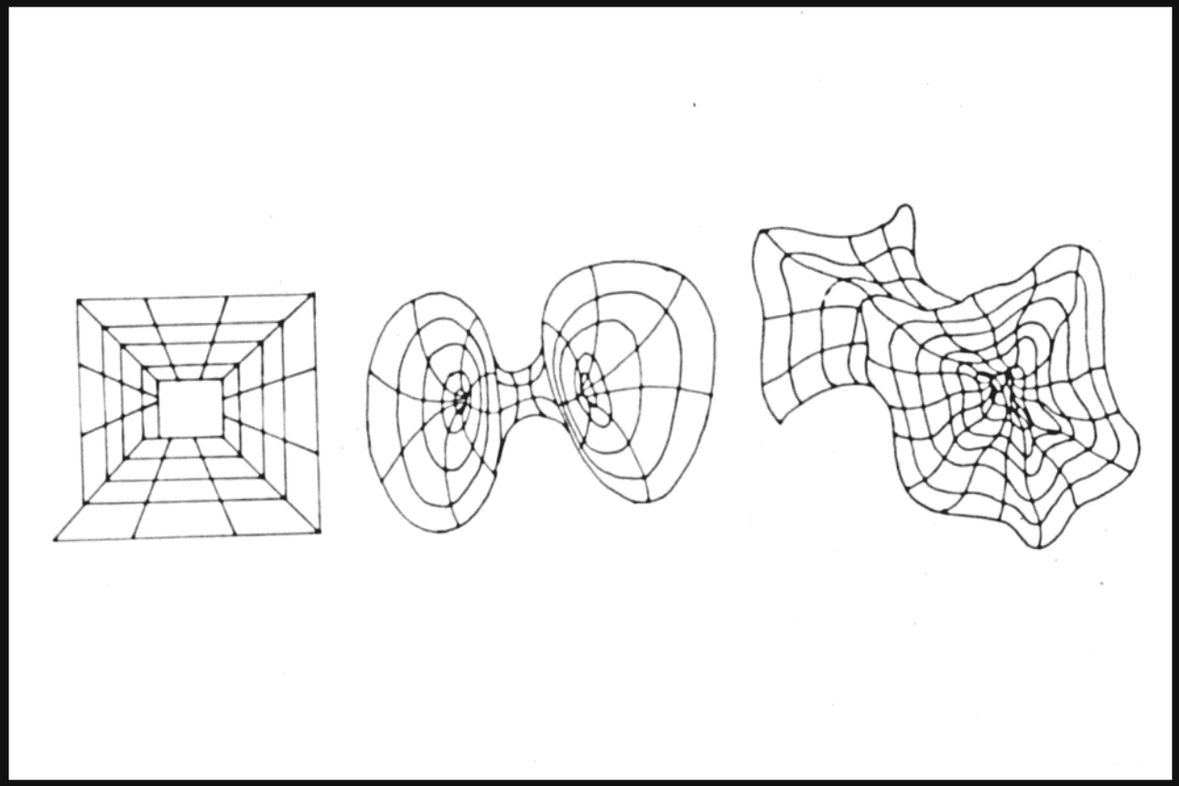


Solid Volume



travel.ca.msn.com

Open Volume



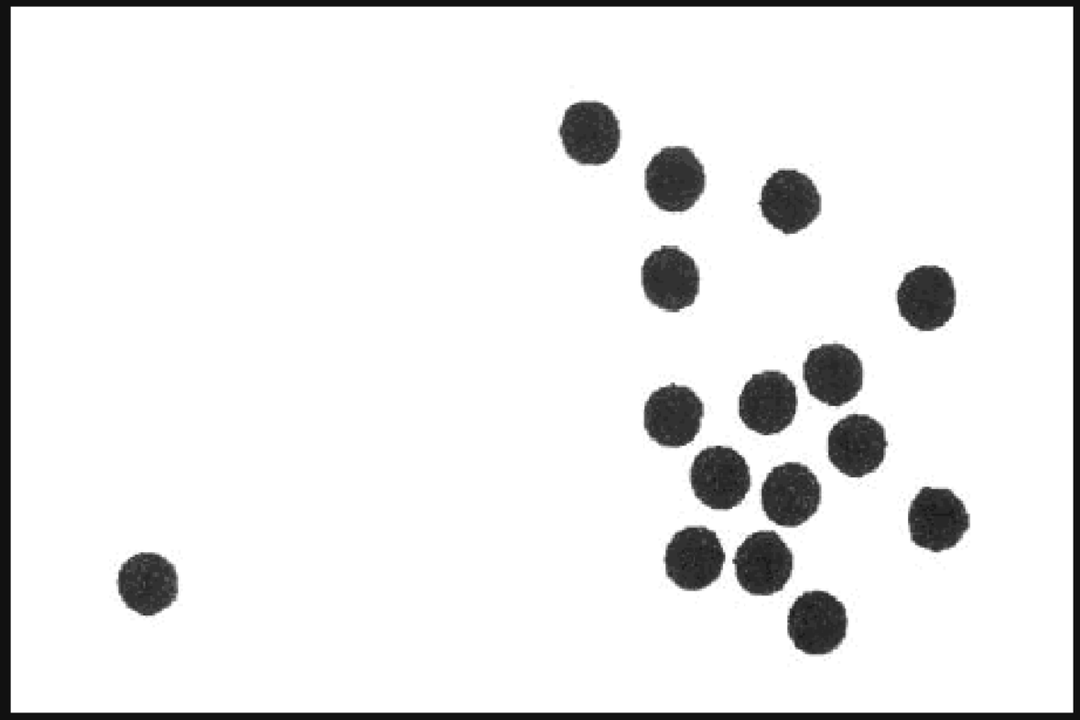
Exercise #2-1 (Basic Elements)

Columbia River Gorge

VARIABLE ELEMENTS

- Number
- Position
- Size
- Shape (Form)
- Interval
- Texture
- Time
- Light
- Visual Force

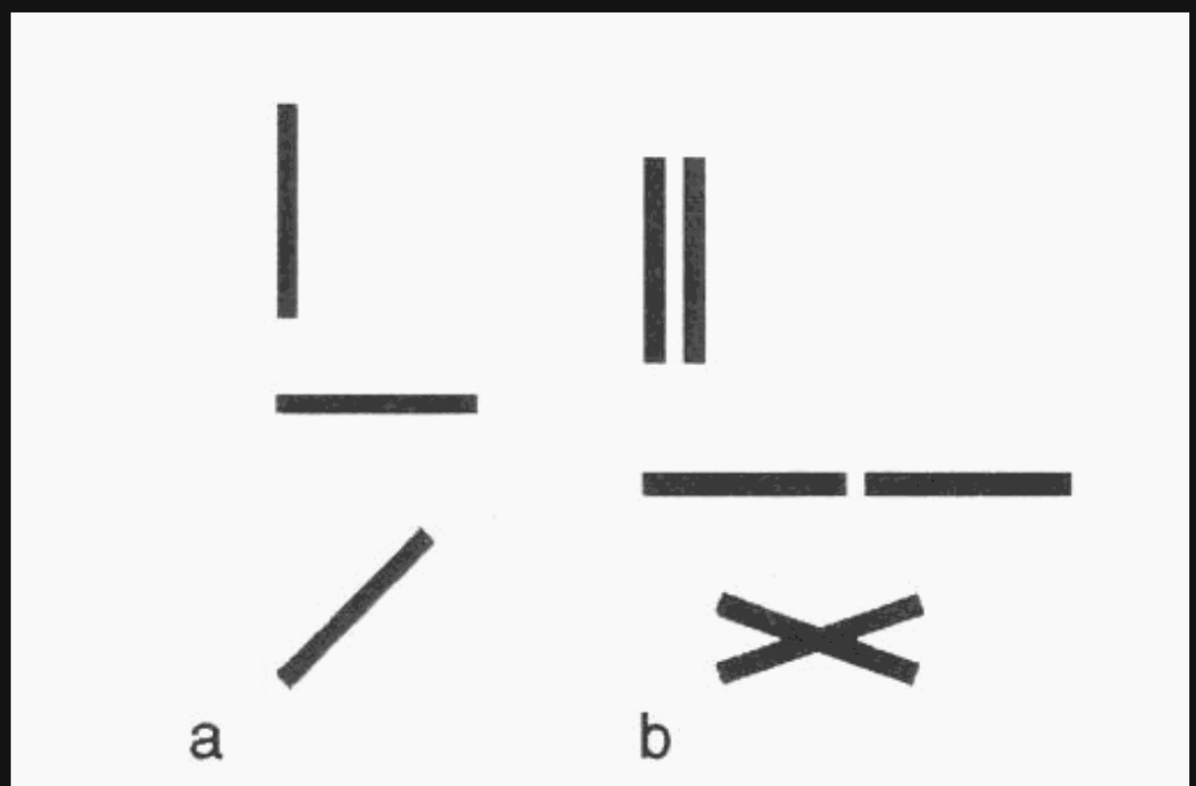
Number



One Block easy

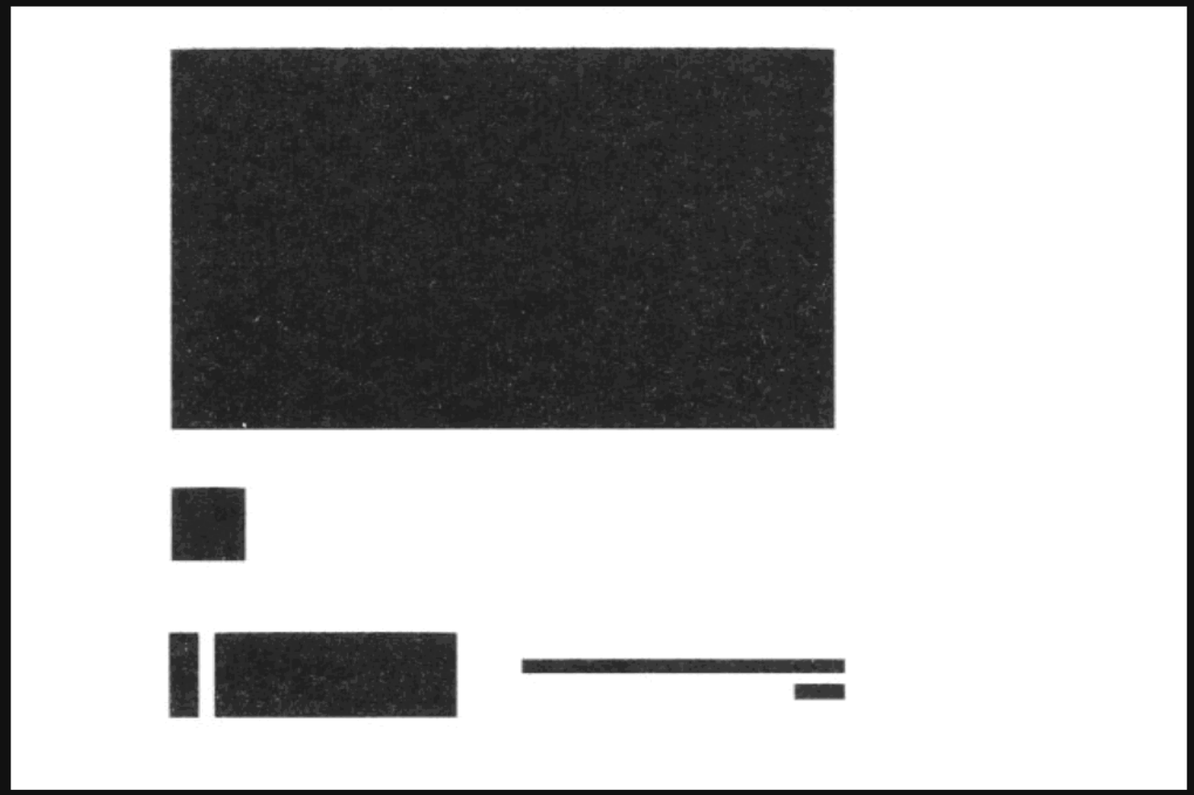
Many blocks difficult

Position



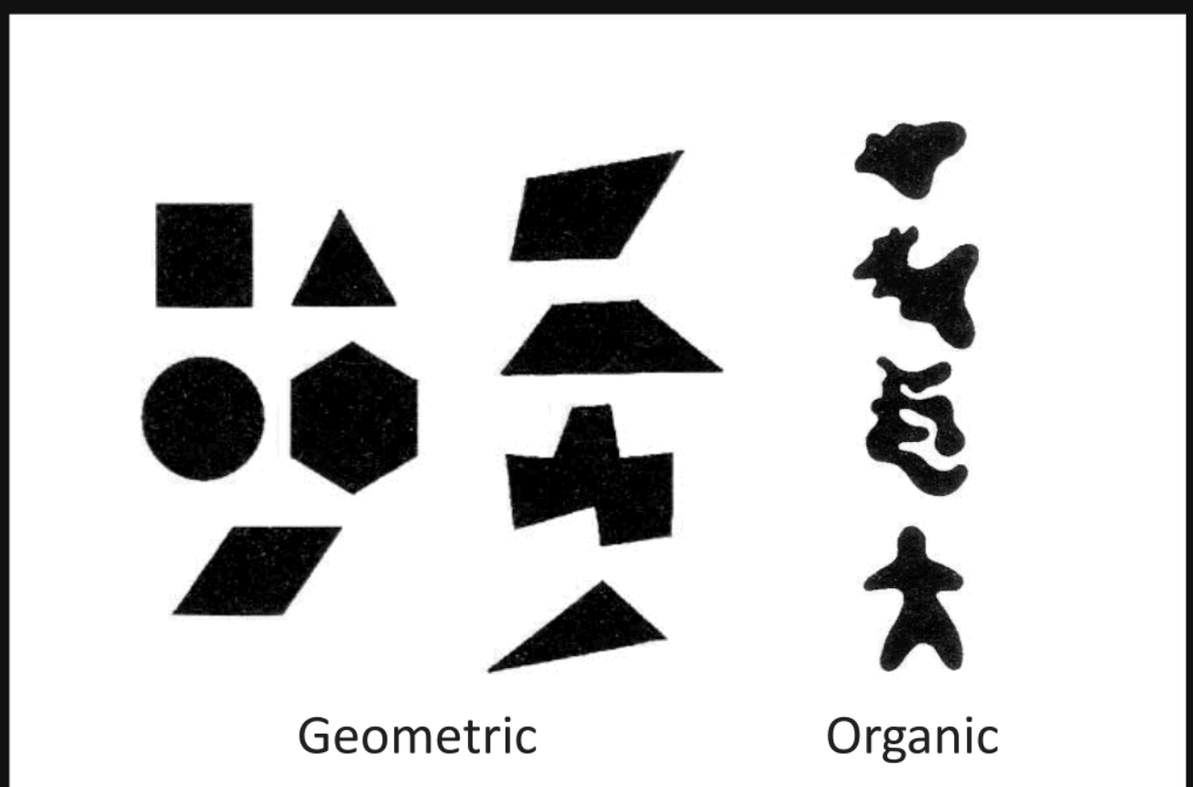
Cut block is positioned vertically on the landscape and looks and feels uncomfortable.

Size



alainsaffel.com

Shape (Form)



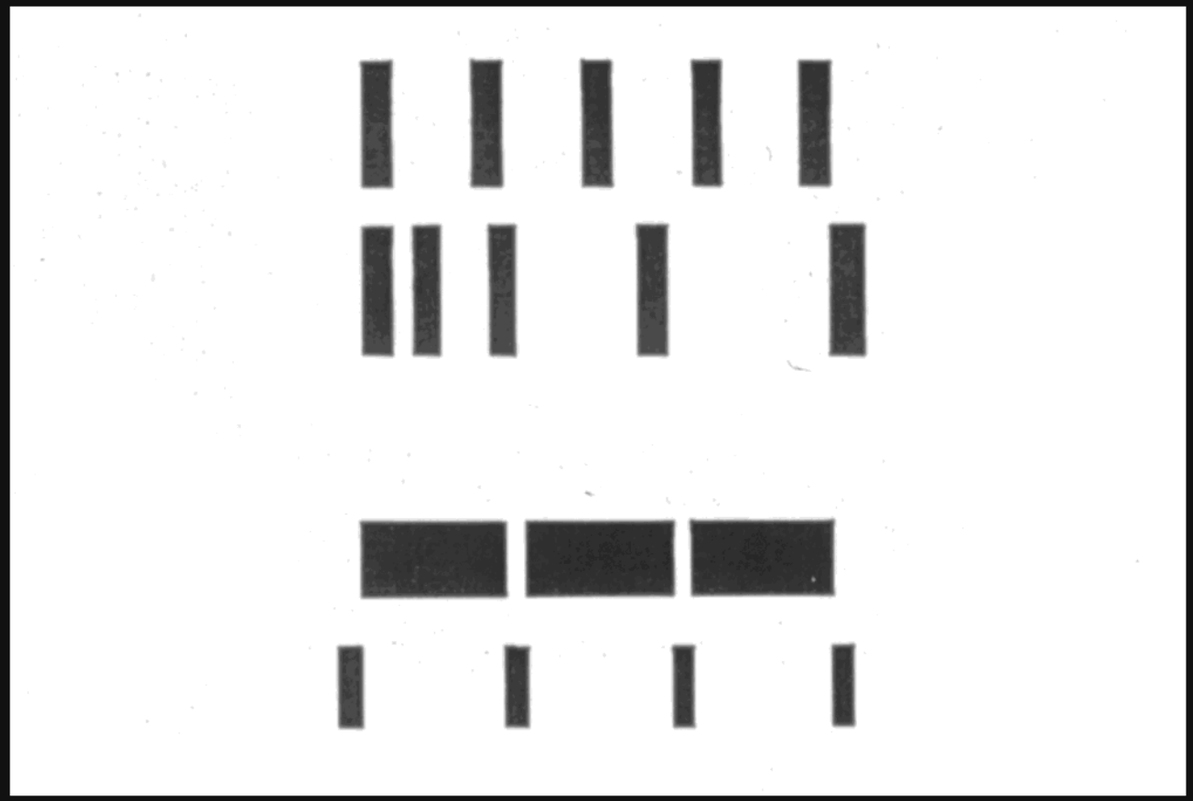
Modification
VQO

Partial Retention
VQO

Shape (Form)

Exercise #2-2 (Shapes & Forms)

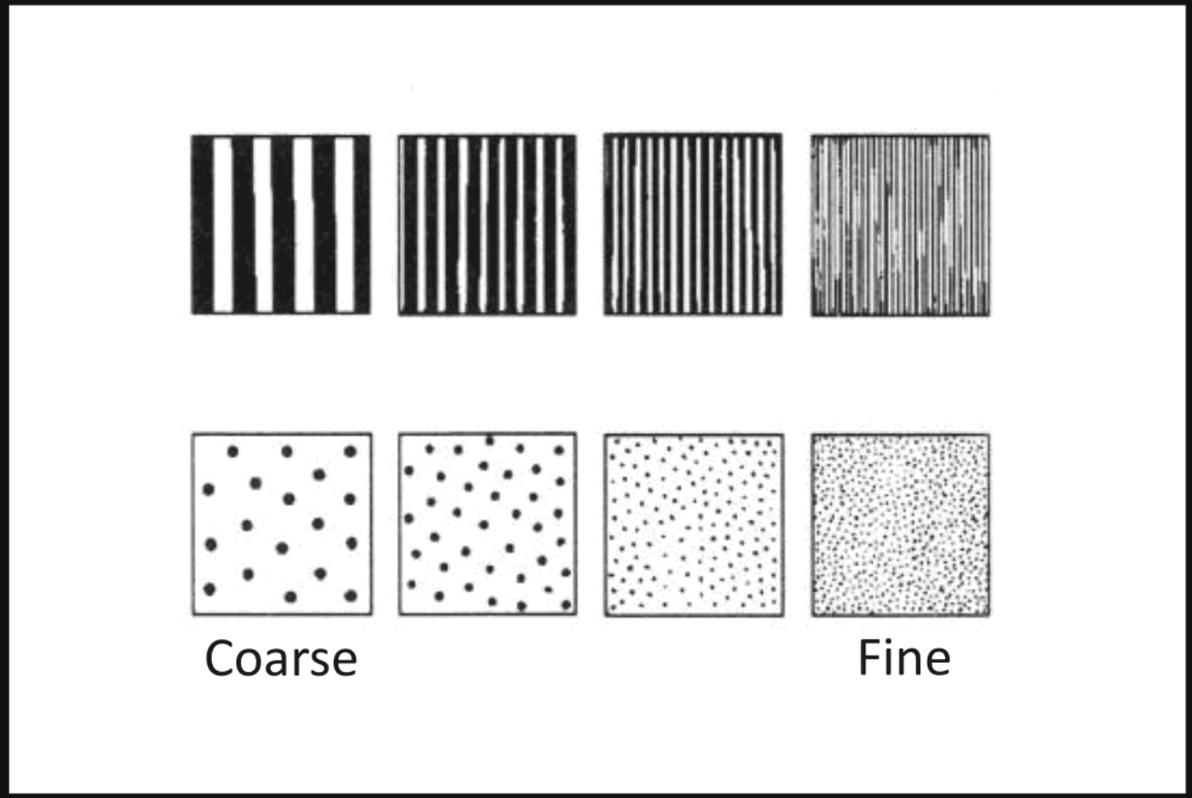
Interval



The spacing of elements

Regular Interval of cut blocks introduces formality

Texture



Size of elements and the spacing between them

Replanted area has finer texture than surrounding old growth forest.

Texture

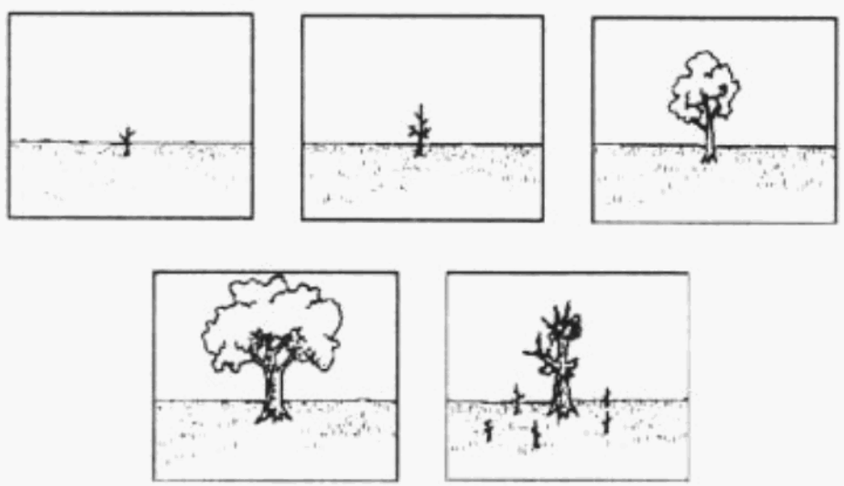
Coarser texture created by numerous natural and human made openings.

Clear cut/leave pattern creates a very coarse texture.

Use of a selection silvicultural system can be an effective approach to change the texture of even aged stands. However, the shape of partial cuts still have to be designed or the new texture will read as a shape.

Exercise #2-3 (Texture)

Time



Time is also measured by growth and decay.

Timing of operations can be important.
When do people use the area?
Blocks more obvious with snow.

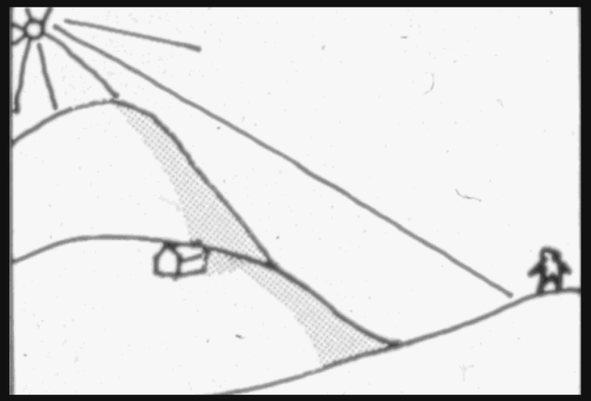
Blocks less obvious in summer.

Blocks more obvious in winter.

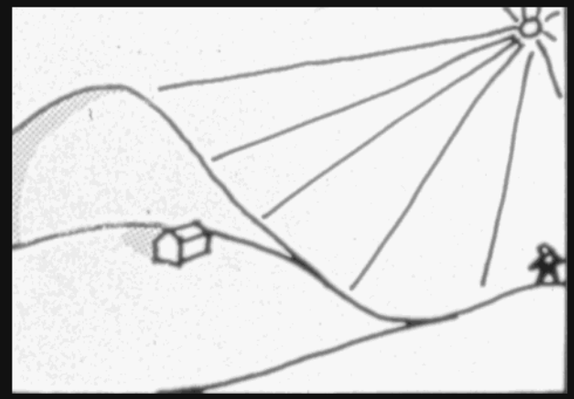
Time

Time also plays a role in terms of visually effective green-up and re-entry timing.

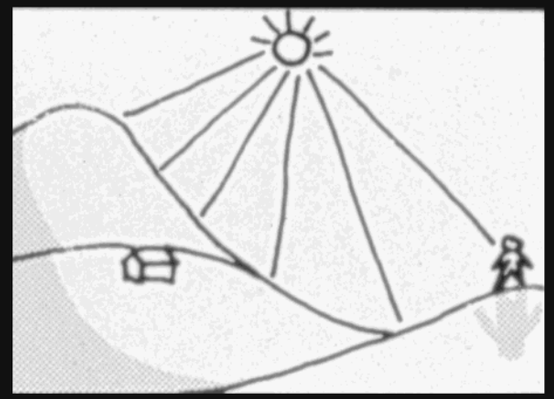
Light



Back lit (Sun in your face) all detail is lost



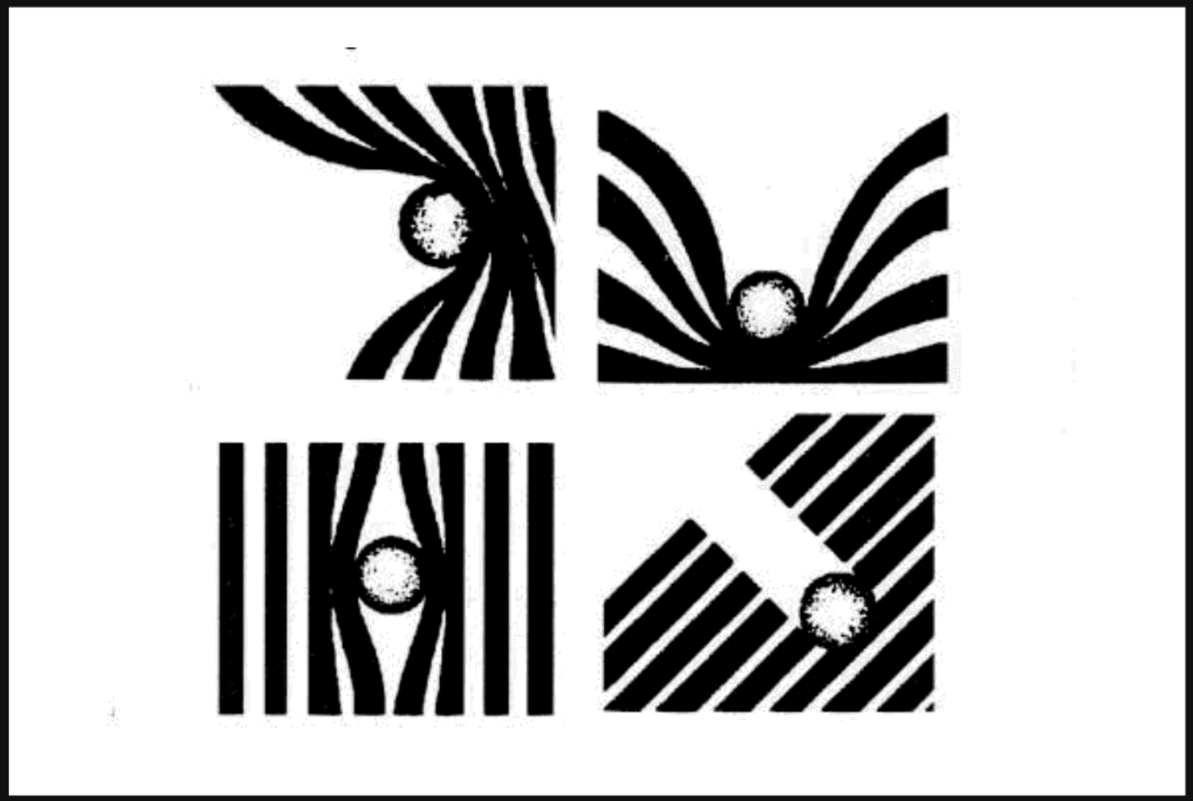
Front lit (sun from behind) colour & texture vibrant but landform indistinct

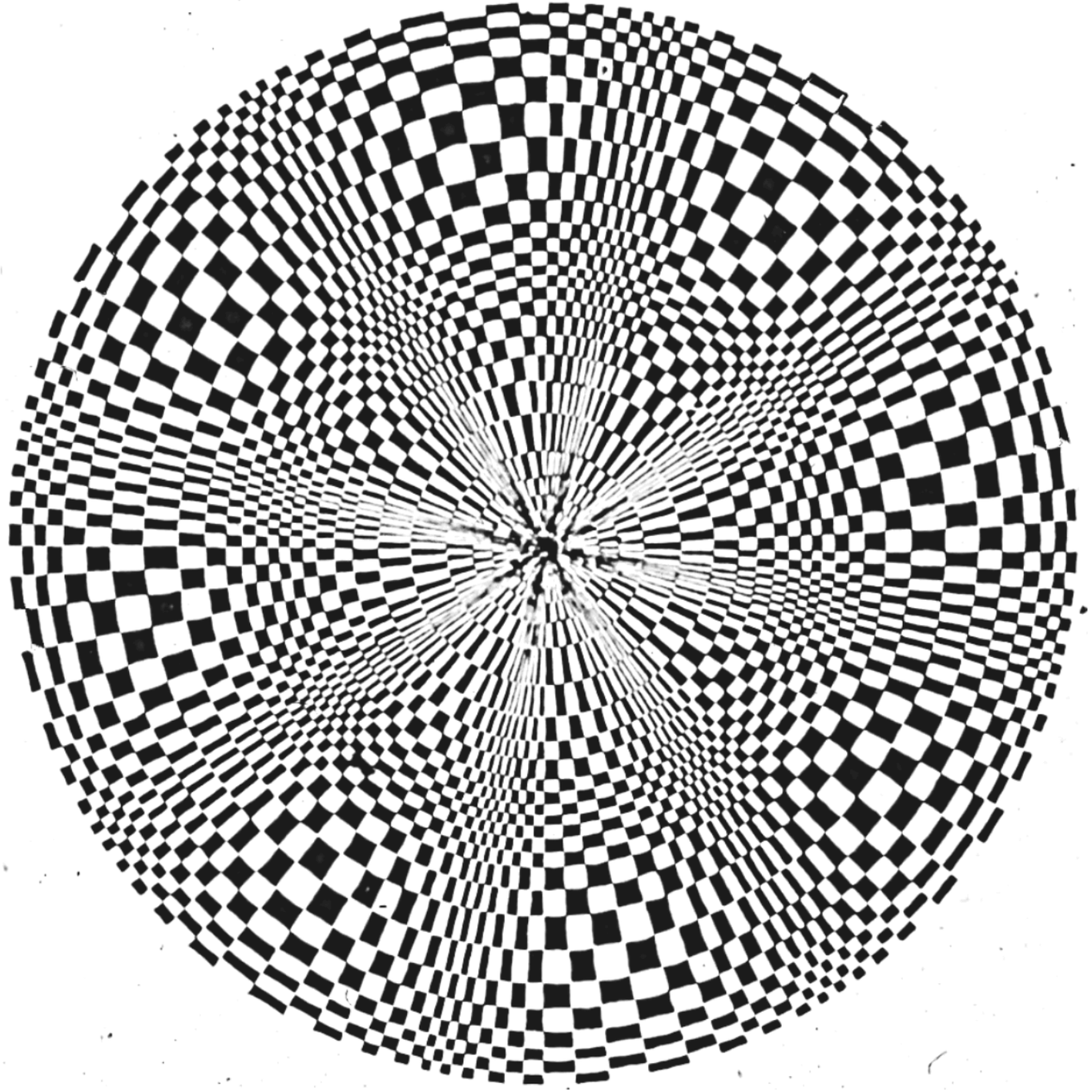


Side lit accentuates 3 D aspect of landscape.

Visual Force

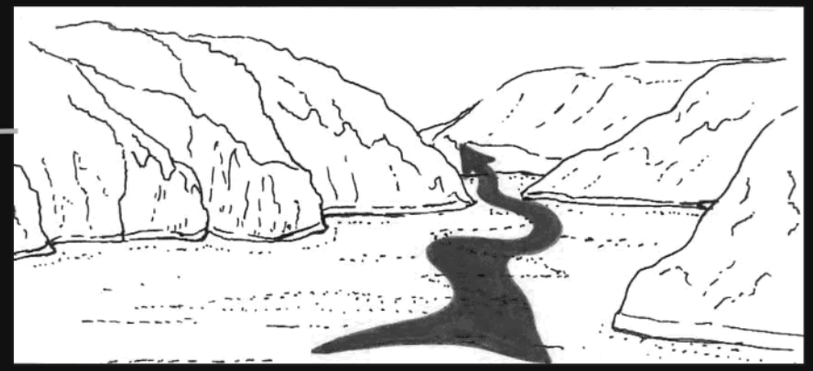
The illusion of movement

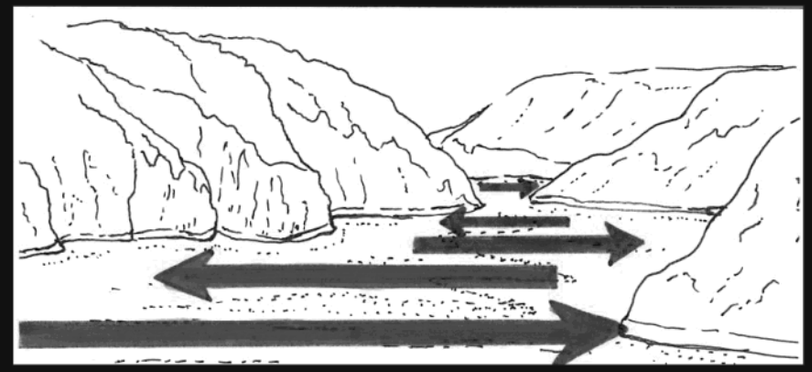




Visual Force

1000lonelyplaces.com/





OBJECTIVES

- Unity (Not Discussed)
- Diversity (Not Discussed)
- Genius Loci

Genius Loci (Spirit of Place)

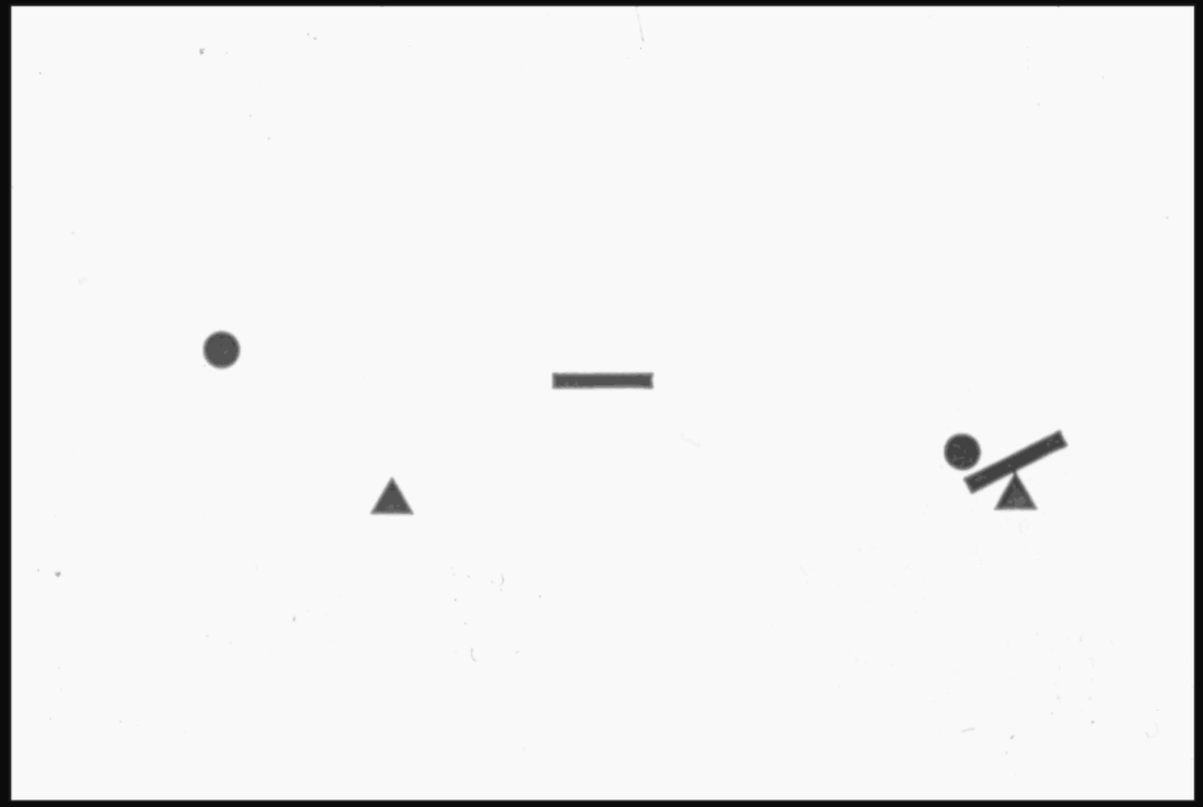
Calvin Creek Falls, Nootka Island

3 Sisters, Carmanah

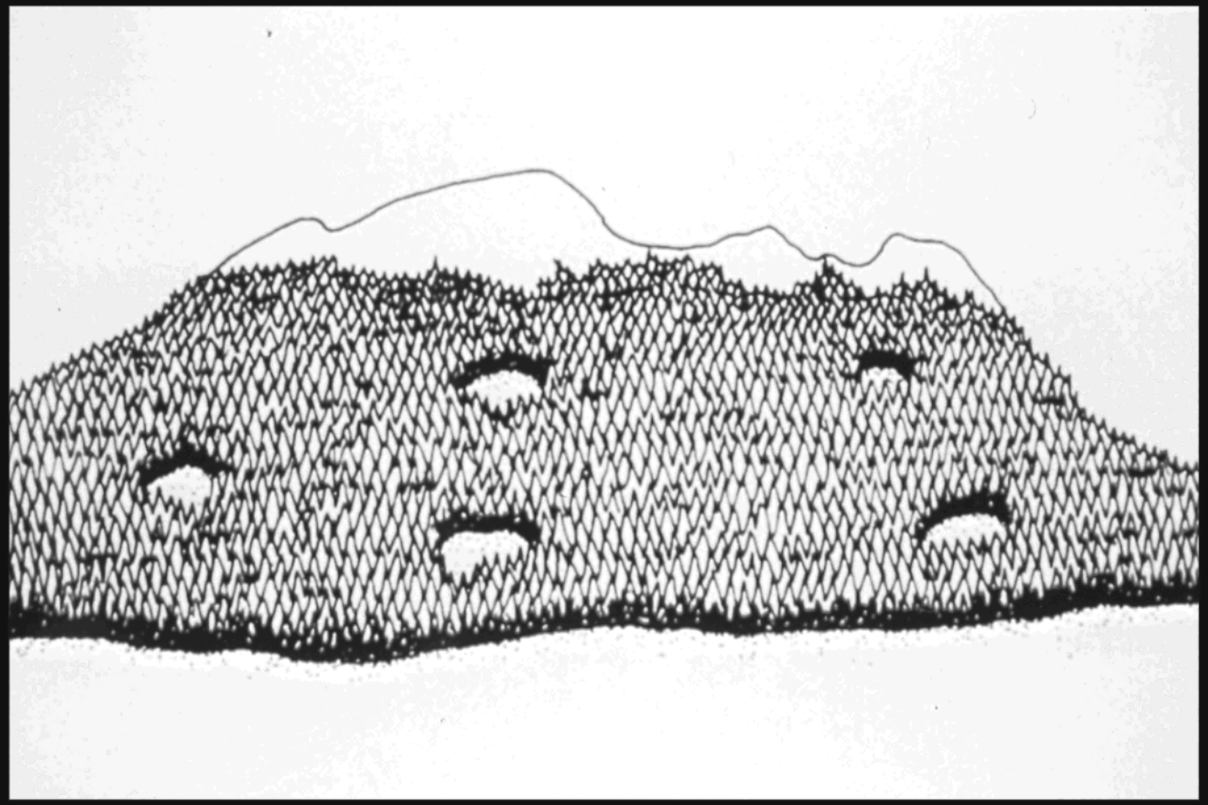
SPATIAL CUES

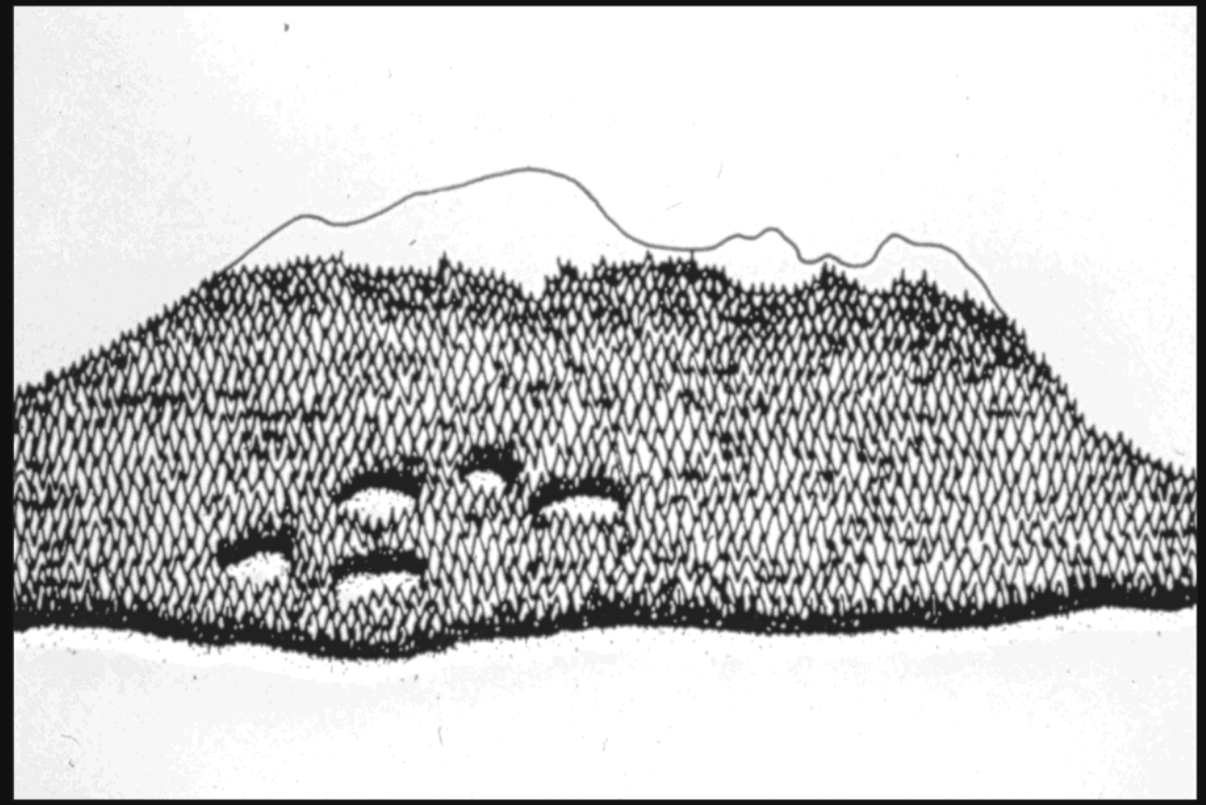
- Nearness
- Enclosure (Not Discussed)
- Interlock
- Continuity
- Figure & Ground

Nearness

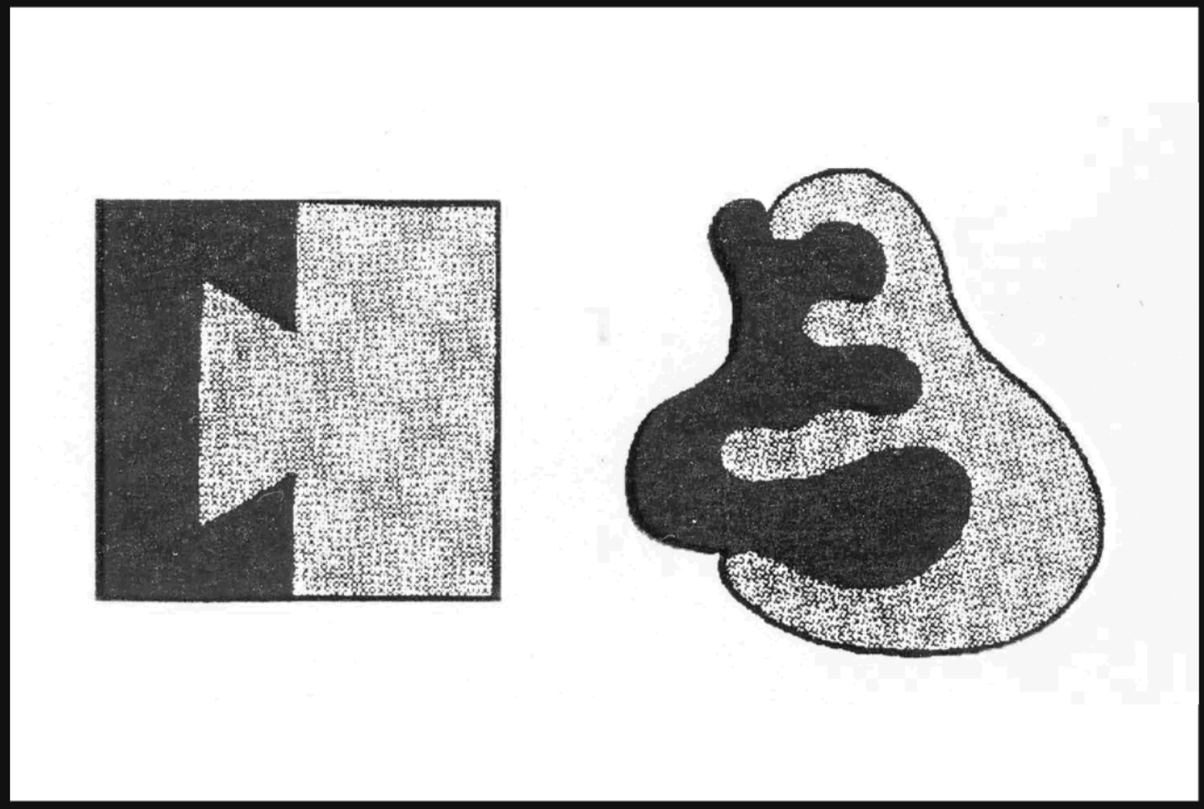


Nearness

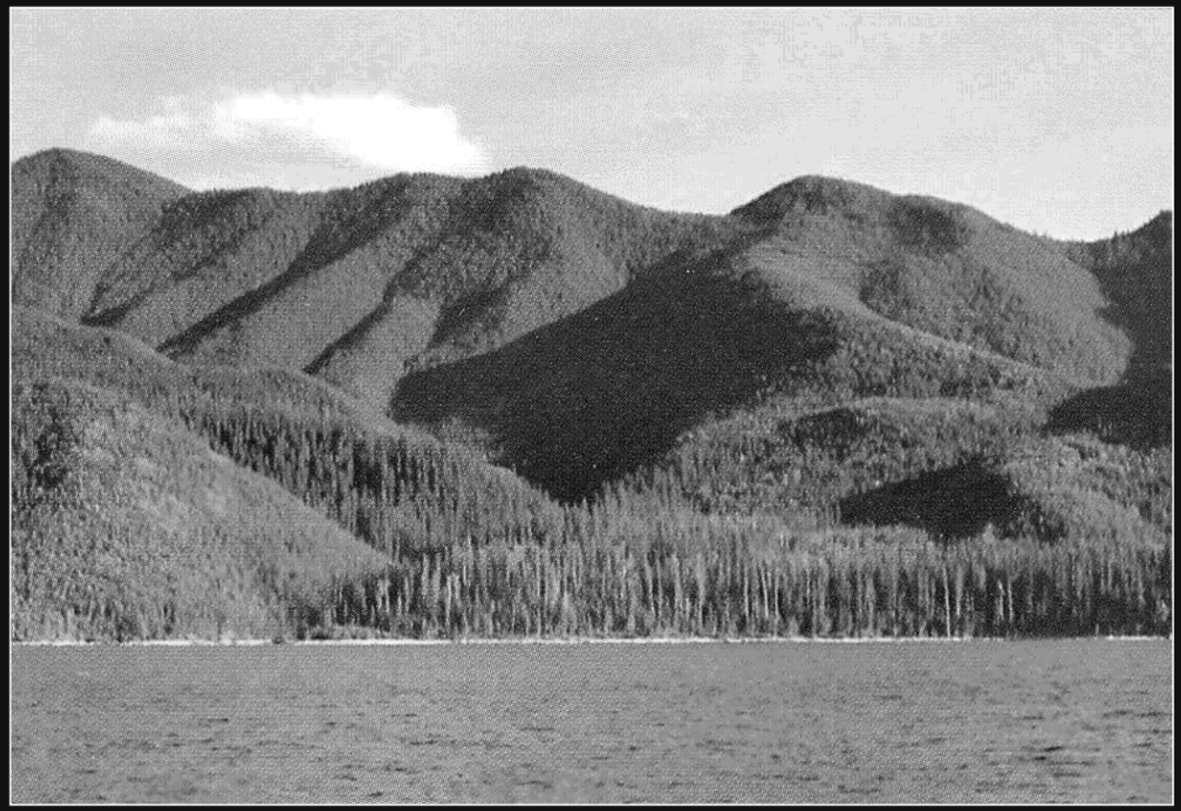




Interlock



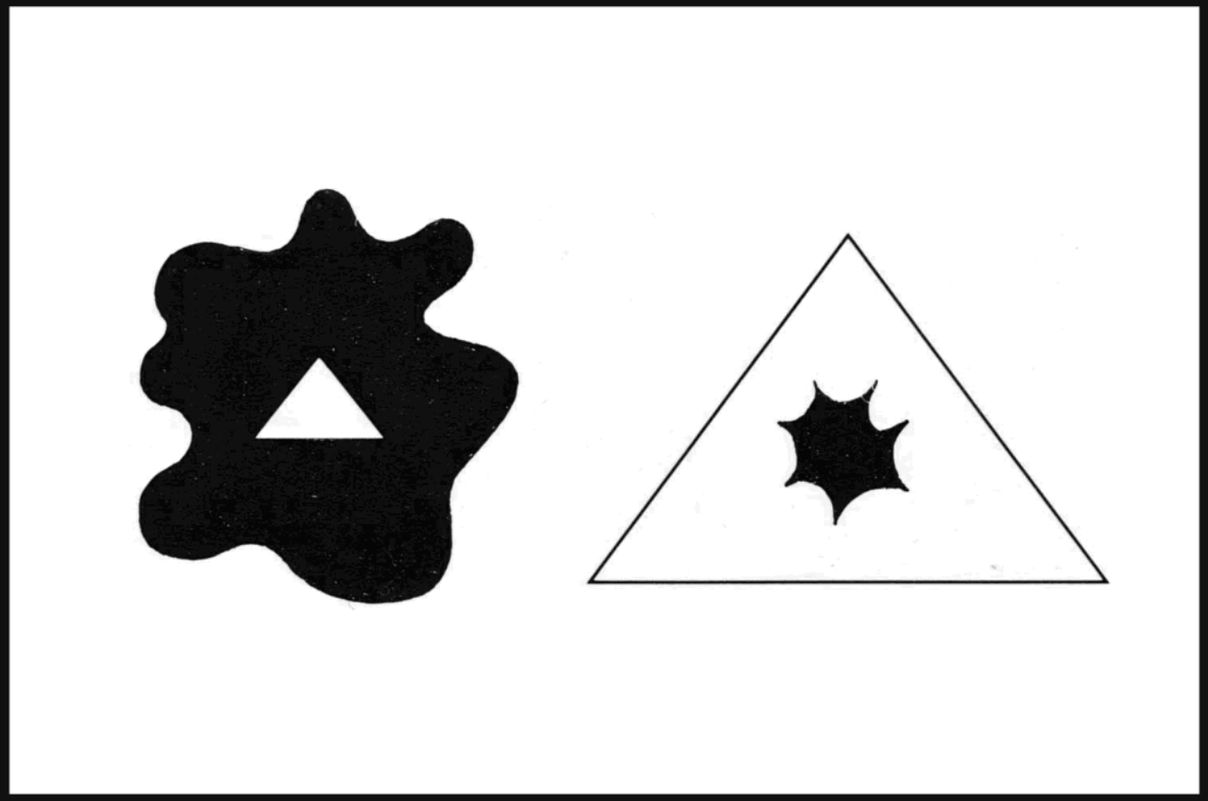
Continuity



Strong continuity of forest

Continuity of forest lost

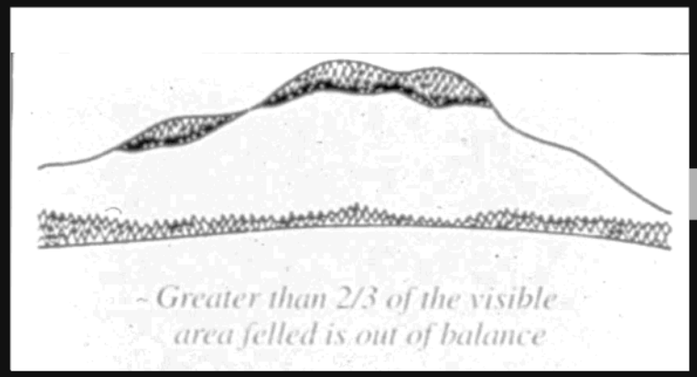
Figure & Ground

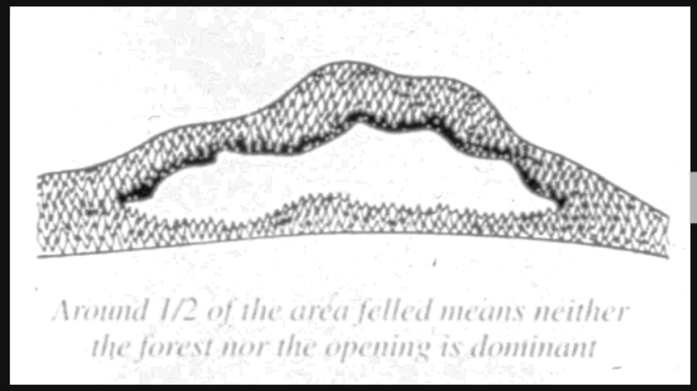


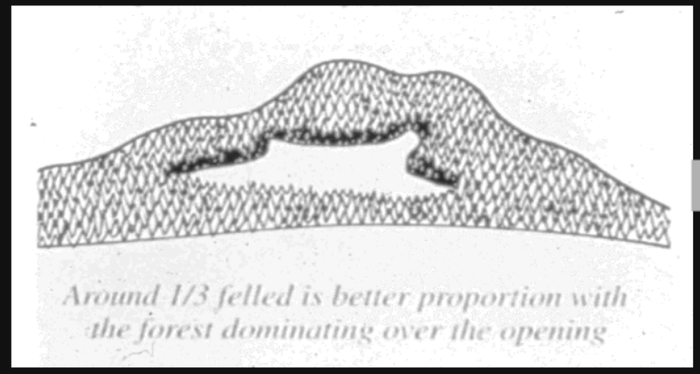
STRUCTURAL ELEMENTS

- Balance
- Tension
- Rhythm
- Proportion
- Scale

Proportion


~ Greater than 2/3 of the visible
area felled is out of balance

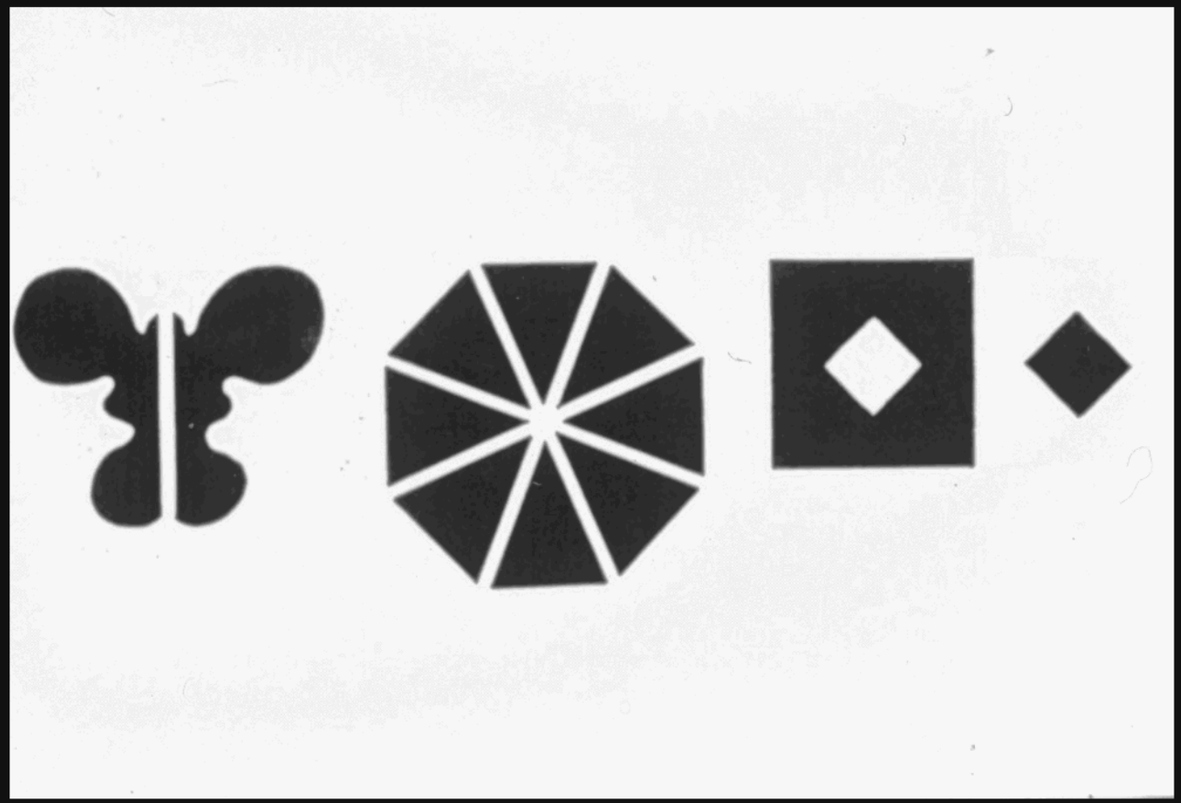

Around 1/2 of the area felled means neither
the forest nor the opening is dominant


Around 1/3 felled is better proportion with
the forest dominating over the opening

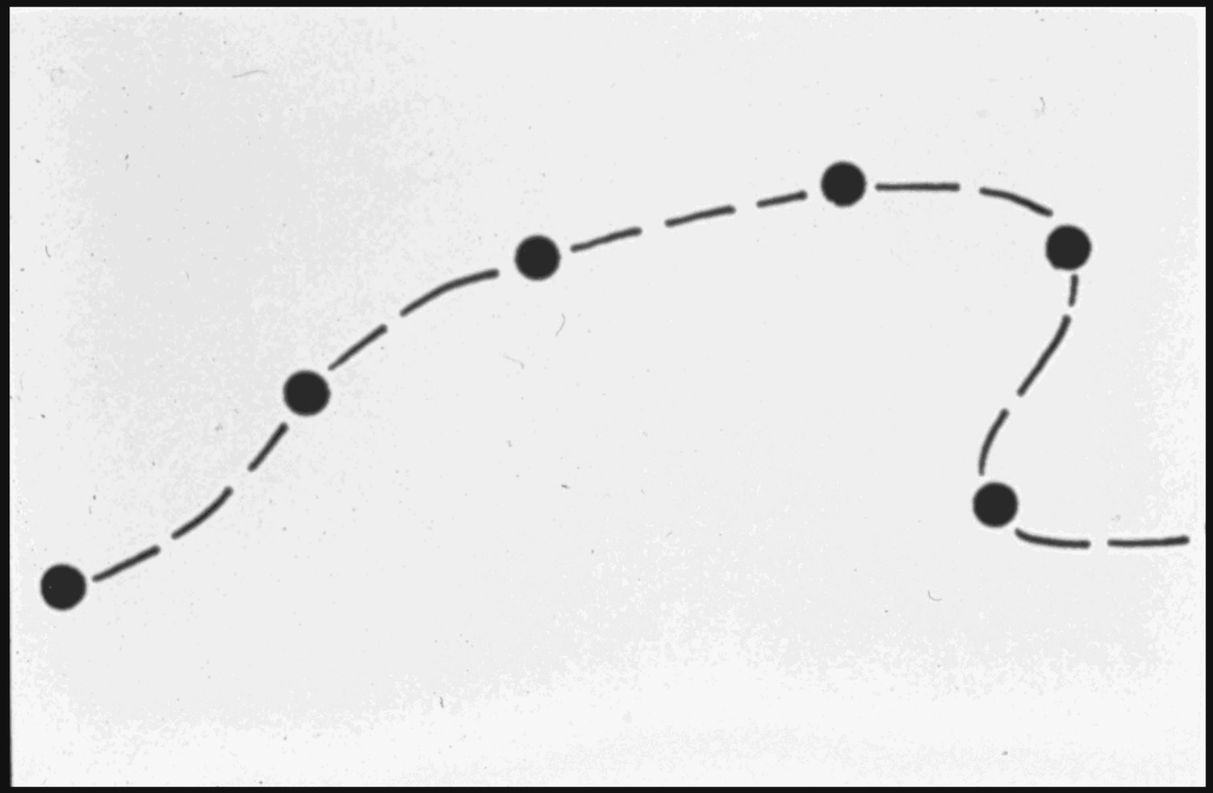
ORDERING

- Axis
- Symmetry
- Hierarchy
- Datum
- Transition

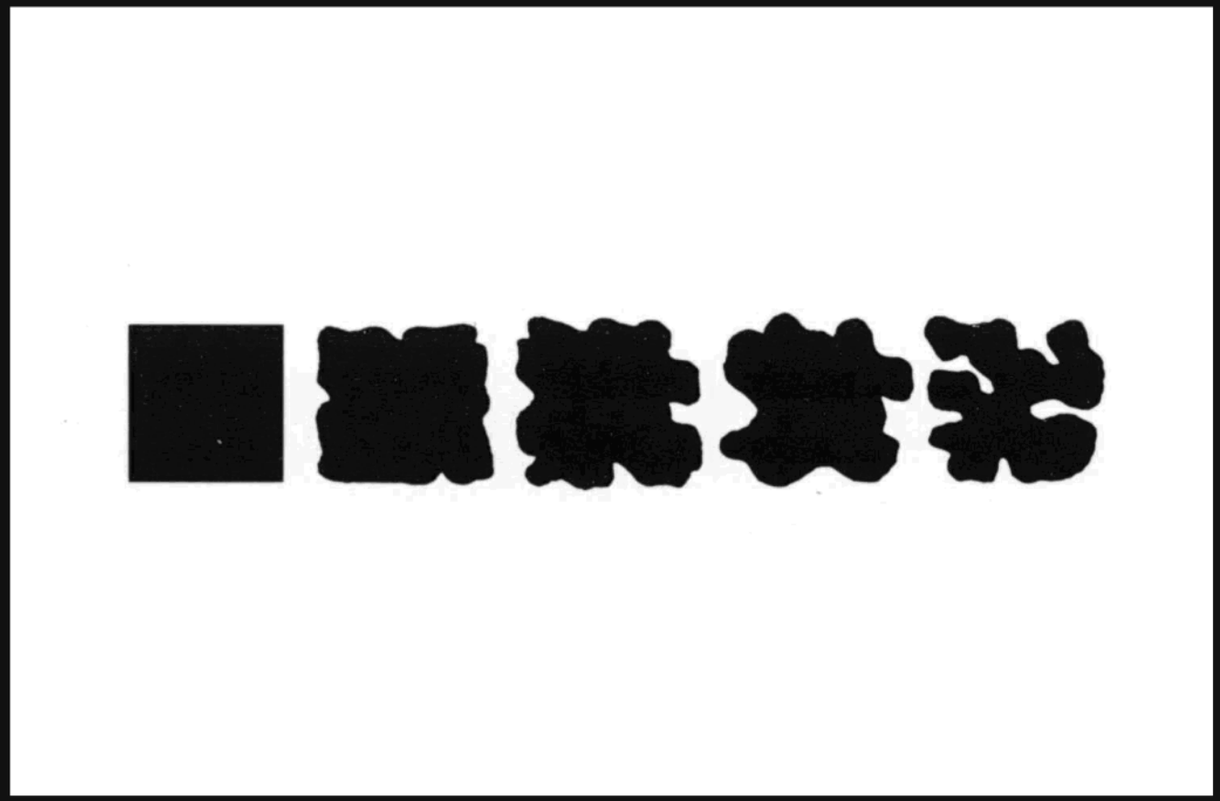
Symmetry



Datum



Transition

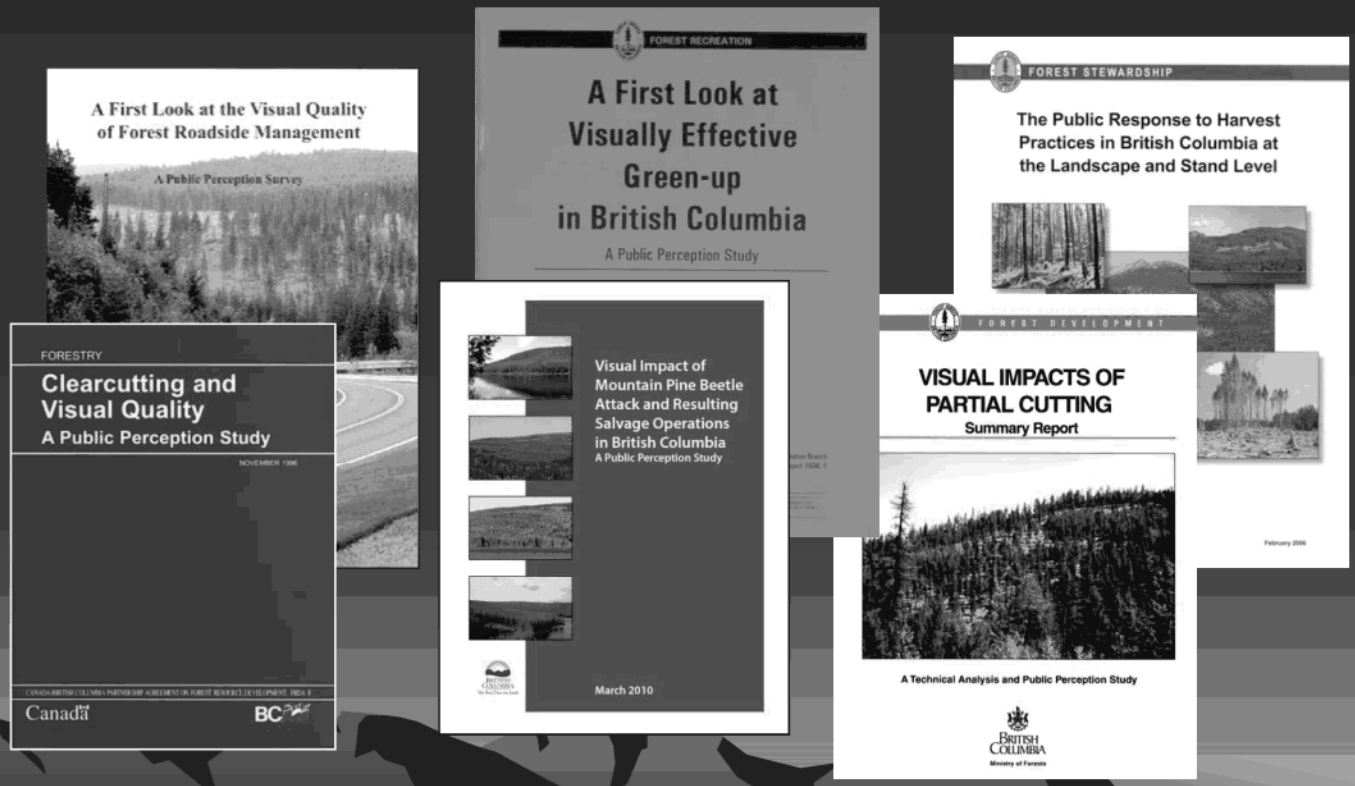


Transition

To Landscape Character Analysis

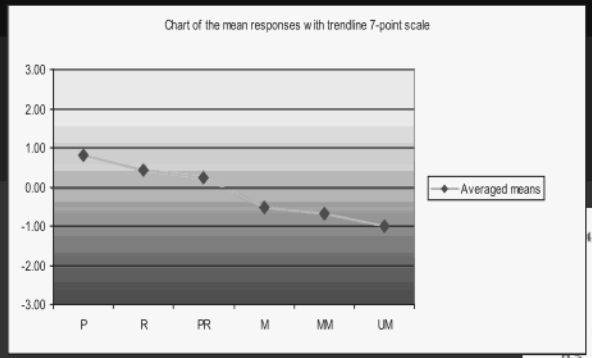
Using Public Perception Research to Guide Visual Resource Management

What have we learned in BC?



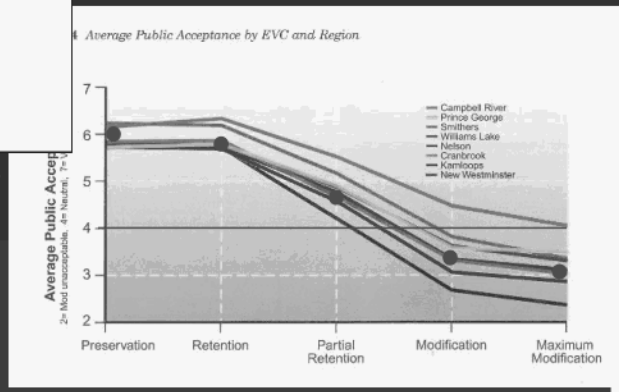
BRITISH COLUMBIA

Public Response to Visual Quality Classes

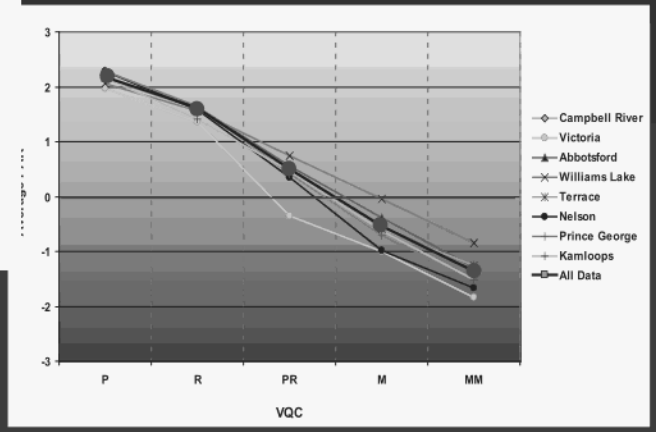


Logging in Kootenay Landscapes 1989

The MFLNRO Visual Management System is built on the premise that the public sees things similar to Visual Experts.



Clear Cutting to meet visual Quality 1996



Public Response to Harvest Practices 2006

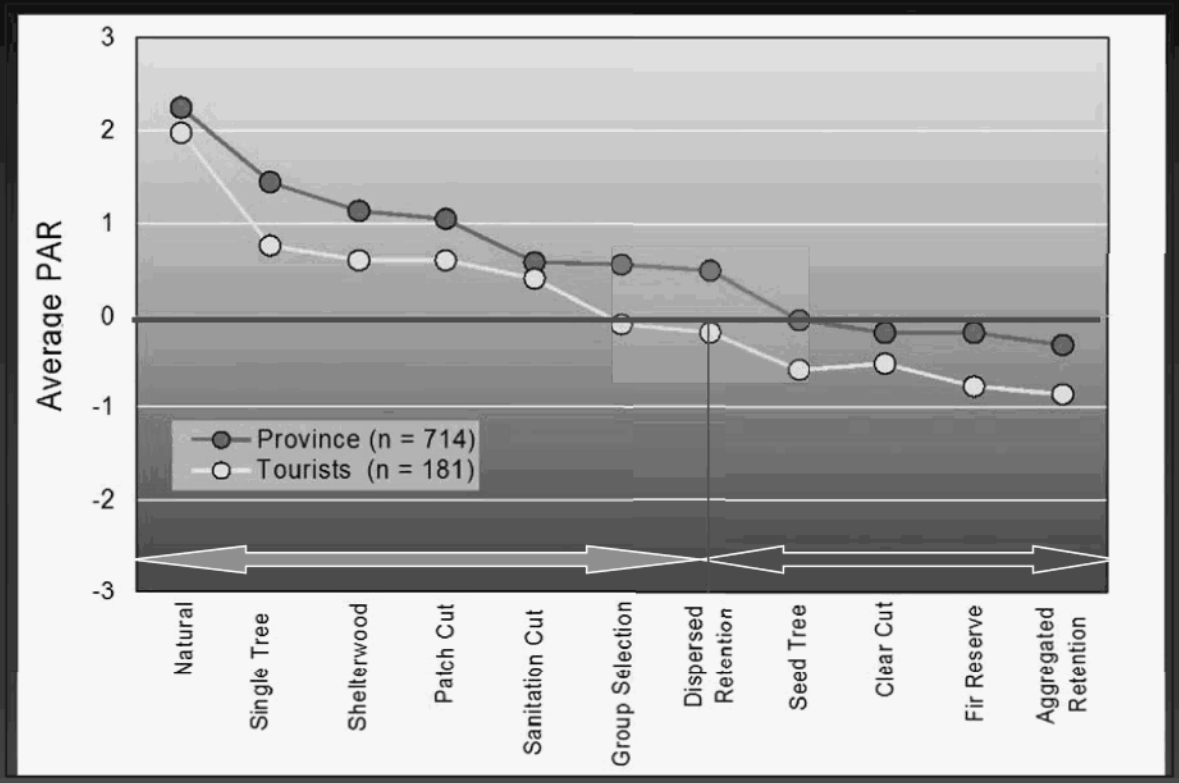
28 years of public perception research in BC suggests that the public almost always likes natural scenes and almost always dislikes modified scenes.

Public Response to Silvicultural Systems

Extended Rotation, Commercial Thinning, Group Selection, Dispersed Retention and Patch Cuts receive a positive response.

Aggregated Retention, clear cuts and seed tree operations generally receive a borderline or negative response.

N = 65 Openings



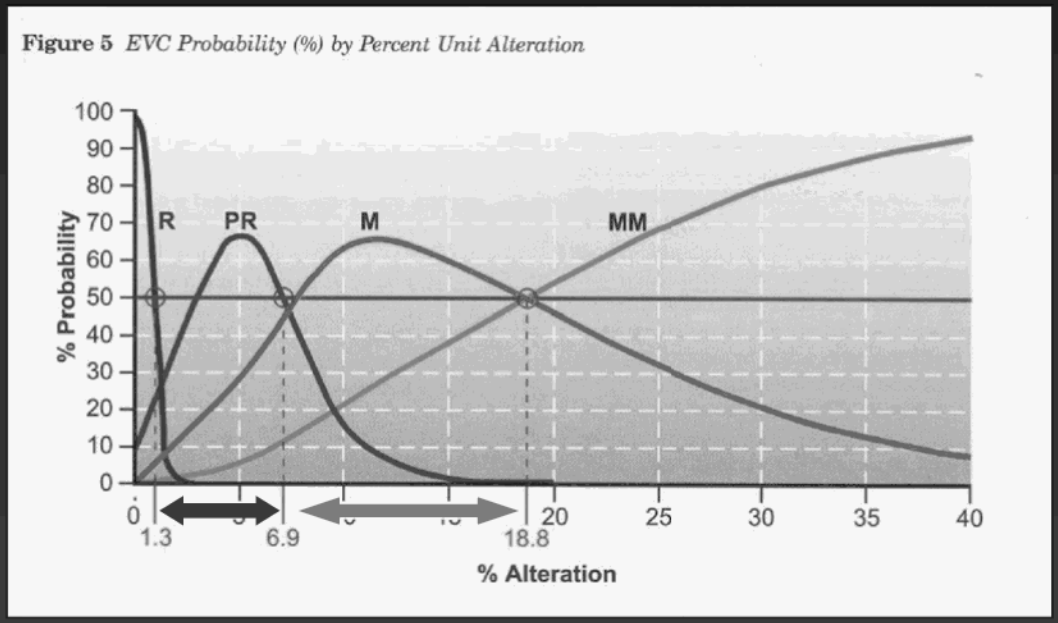
Public Response to Harvest Practices in BC 2006

Clear Cutting to Meet Visual Quality

One goal of the Clear Cutting to Meet Visual Quality study, was to determine if scale of alteration could be a predictor of Visual Quality.

The study found that % landform was the best single predictor and that Retention and Partial Retention classes could be predicted at a probability of 77.8% and 85% respectively.

This graph shows the probability (50%+1) that that a clear cut would be classified into a particular VQO based on % alt.



Clear Cutting to meet Visual Quality 1996

Note: While % alteration may be reasonable predictor, it must be used in concert with visual design and must be applied to a landform to be effective.

Visual Impacts of Partial Cutting

One goal of the Partial Cutting Study was to determine which site and stand variables would best predict Visual Quality.

The combination of variables; % Volume removed, % stems removed and average tree height were found to be the best predictors of EVC.

This table was developed to provide the field practitioner with the ability to predict the out come of a selection cut based on a specific level of volume/stems removed.

Tree Height (Metres)

Volume (Stems) Removed in %	5	10	15	20	25	30	35	40	45	50
10	R	R	R	R	R	R	R	R	PR	PR
20	R	R	R	R	R	R	PR	PR	PR	PR
30	R	R	R	R	PR	PR	PR	PR	PR	PR
40	R	R	PR	PR	PR	PR	PR	PR	PR	M
50	PR	PR	PR	PR	PR	PR	PR	M	M	M
60	PR	PR	PR	PR	PR	M	M	M	M	M
70	PR	PR	PR	M	M	M	M	M	M	M
80	PR	PR	M	M	M	M	M	M	M	M
90	M	M	M	M	M	M	M	M	M	M

Visual Impacts of Partial Cutting 1997

Retention Harvesting to Meet Visual Quality

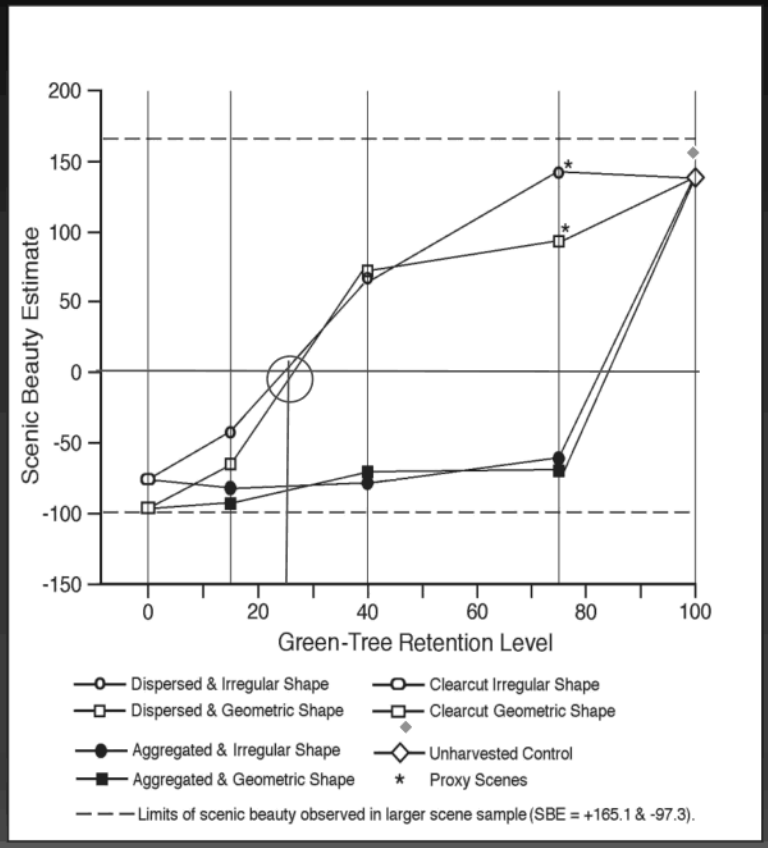
Study 1:

Aesthetic Perceptions of Green Tree Retention Harvests in Vista Views

Dr. Robert Ribe,
University of Oregon 2005

"The current Northwest Forest Plan minimum standard of 15 percent green-tree retention inside harvested areas is too low."

Dispersed retention levels below about 25 percent are likely to produce various degrees of perceived ugliness.



Conclusions based on 331 respondents rating 22 images

Retention Harvesting to Meet Visual Quality

Study 2:

Visual Perceptions and Public Acceptability of Variable Retention Harvesting

Dr. Stephen Sheppard & Paul Picard, Dept of Forestry, UBC 2005

Retention pattern		Retention amount							
		6	9	12	15	18	21	24	27
Dispersed retention	Average rating	2.118	4.029	2.412		3.939	4.353	4.941	4.088
	95% confidence interval	+/- 0.245	+/- 0.255	+/- 0.311		+/- 0.255	+/- 0.201	+/- 0.080	+/- 0.225
Mixed retention	Average rating		2.794		2.735	3.294	1.824	3.412	2.382
	95% confidence interval		+/- 0.259		+/- 0.290	+/- 0.242	+/- 0.241	+/- 0.230	+/- 0.248
Grouped retention	Average rating	1.706	2.353	1.676	2.392		3.265	2.088	
	95% confidence interval	+/- 0.255	+/- 0.308	+/- 0.283	+/- 0.166		+/- 0.252	+/- 0.225	

borderline acceptability (not statistically different from the acceptability threshold of 3 at the 0.05 level)
acceptable (statistically significantly at the 0.05 level)
unacceptable (statistically significantly at the 0.05 level)

Dispersed harvesting is more acceptable, to the public at lower levels of retention than is Aggregated Retention.

Dispersed retention at levels of 18% or more is always acceptable to most people (given that the acceptability threshold is 3, or "neutral").

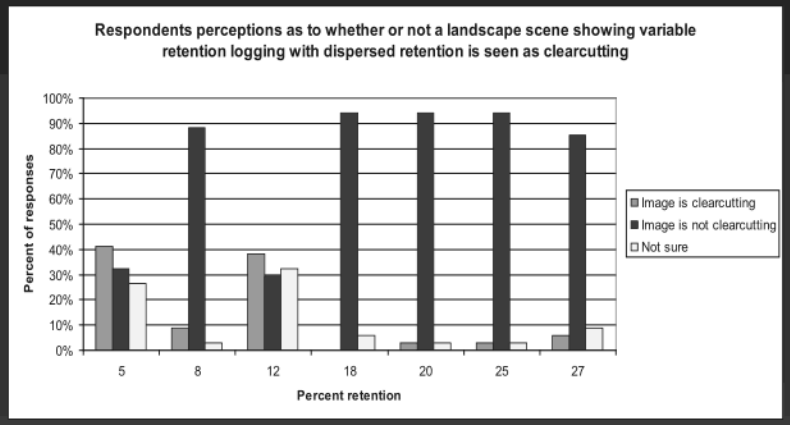
Group retention below 15% levels is never acceptable to most people (given that the acceptability threshold is 3, or "neutral").

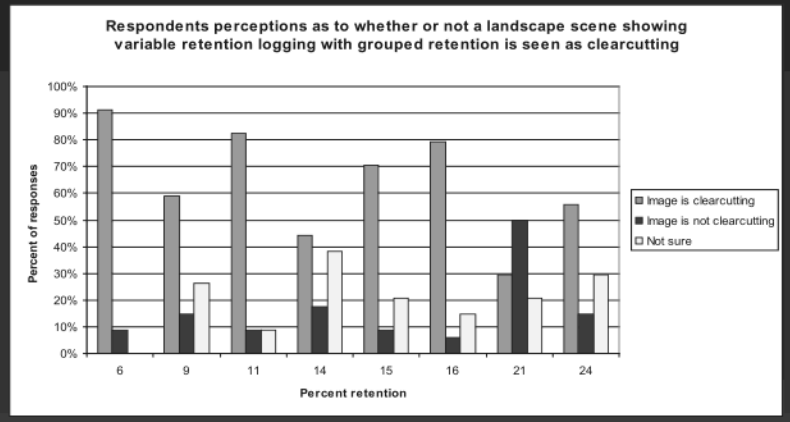
Conclusion based on 34 students rating 36 images

Retention Harvesting to Meet Visual Quality

Study 2: Continued

At what point is variable retention is seen as clearcutting (and for which retention level/pattern)?





Dispersed retention was not perceived as a clear cut when more than 15% of the volume was been retained.

Group Retention was not perceived as a clear cut when more than 30% of the volume was retained in a group retention pattern.

Conclusions based on 34 students rating 22 images

Retention Harvesting to Meet Visual Quality

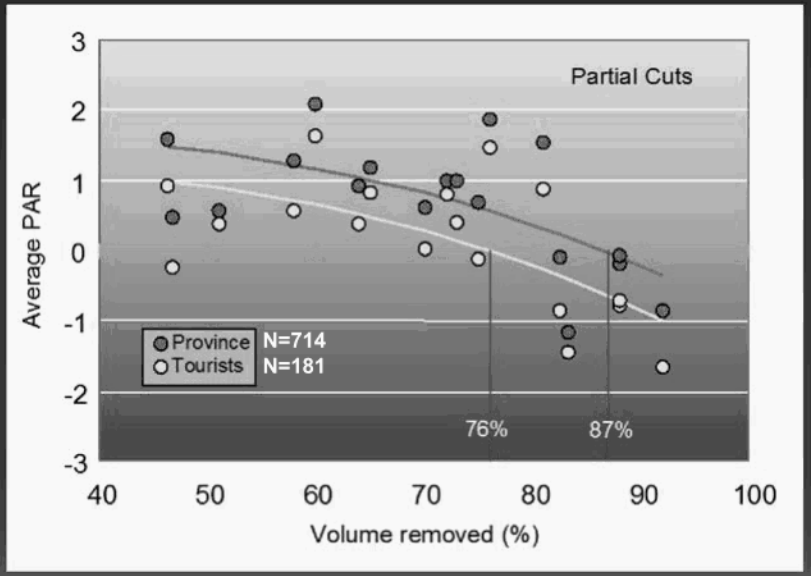
Study 3:

The Public Response to Harvest Practices in British Columbia at the Landscape and Stand Level.

MFLNRO Jacques Marc et al. 2006

Visitors found partial cuts containing 24% or more volume acceptable.

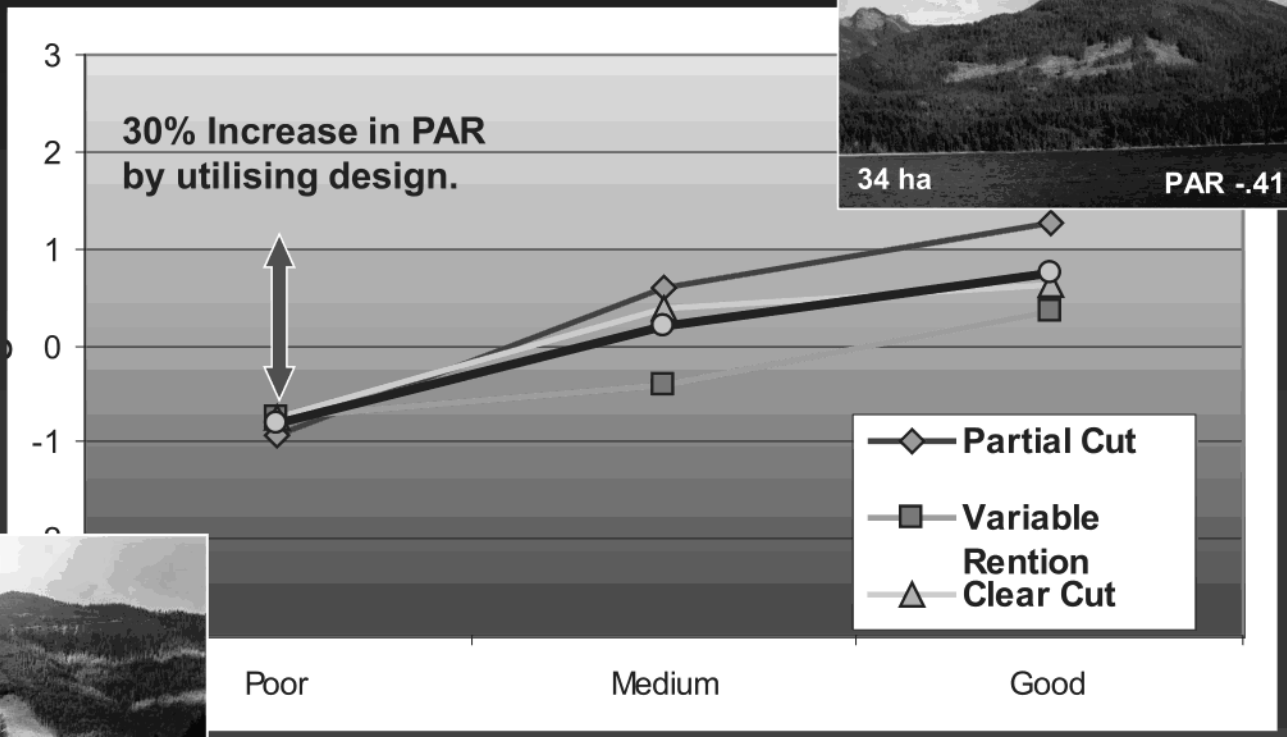
BC Residents found partial cuts containing 13% or more volume acceptable.



Conclusion based on 181 Visitors and 714 Residents rating 36 images

Visual Design and Public Acceptance

Poorly designed openings are viewed to be less acceptable than blocks with good or medium design.

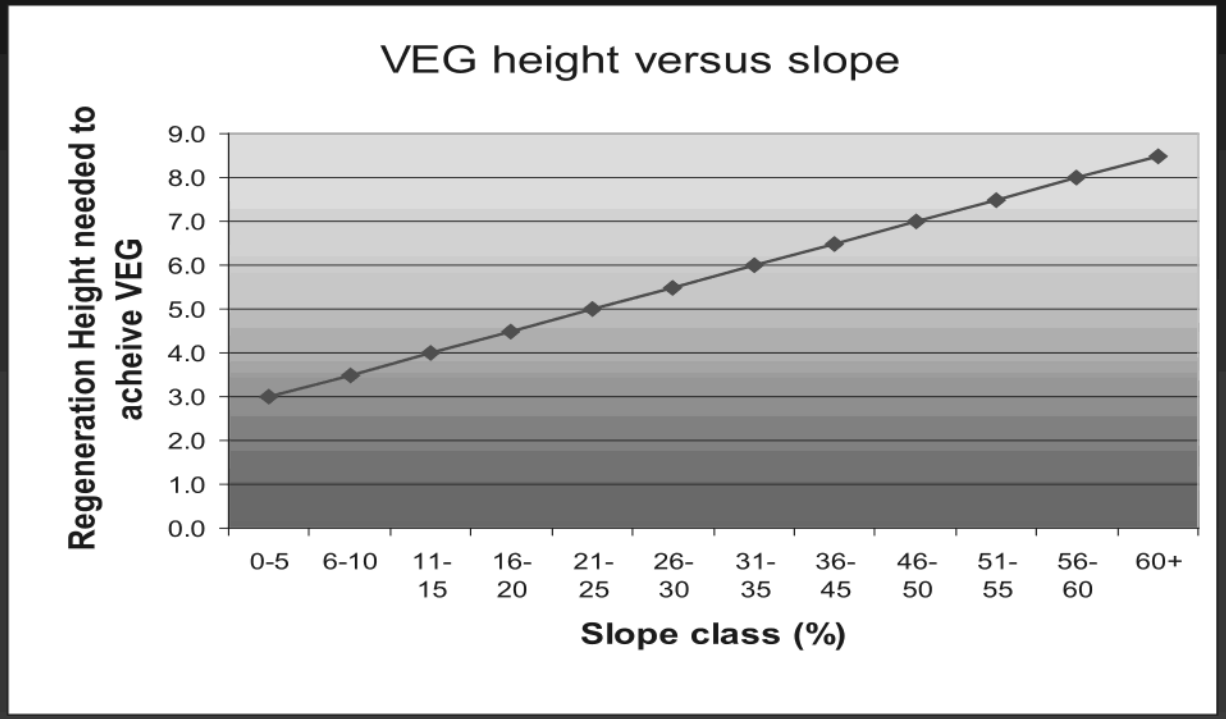


Public Response to Harvest Practices in BC 2006

Conclusion based on 895 respondents rating 50 images

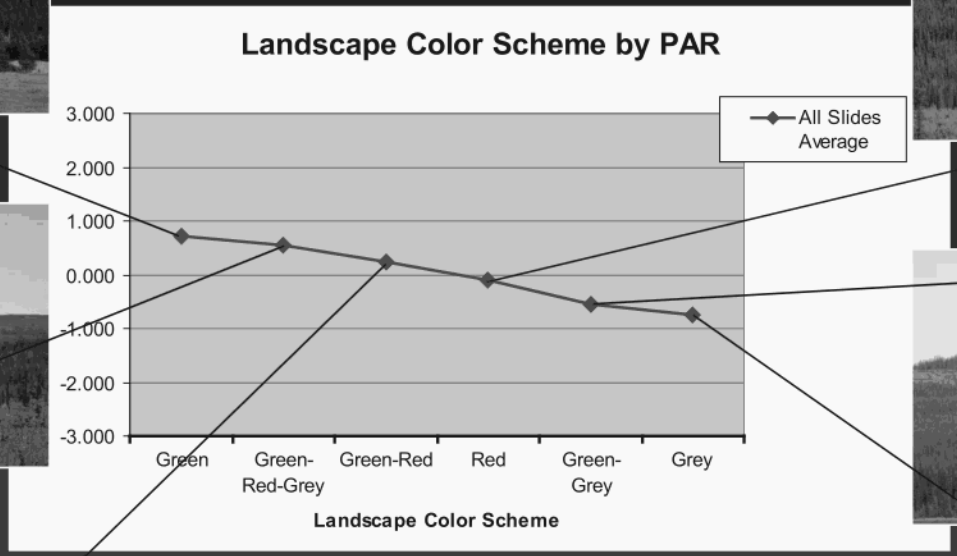
Visually Effective Green-up

As the slope of the land increases the height of trees for an opening to achieve VEG increases.



Public Perceptions of MPB Attack

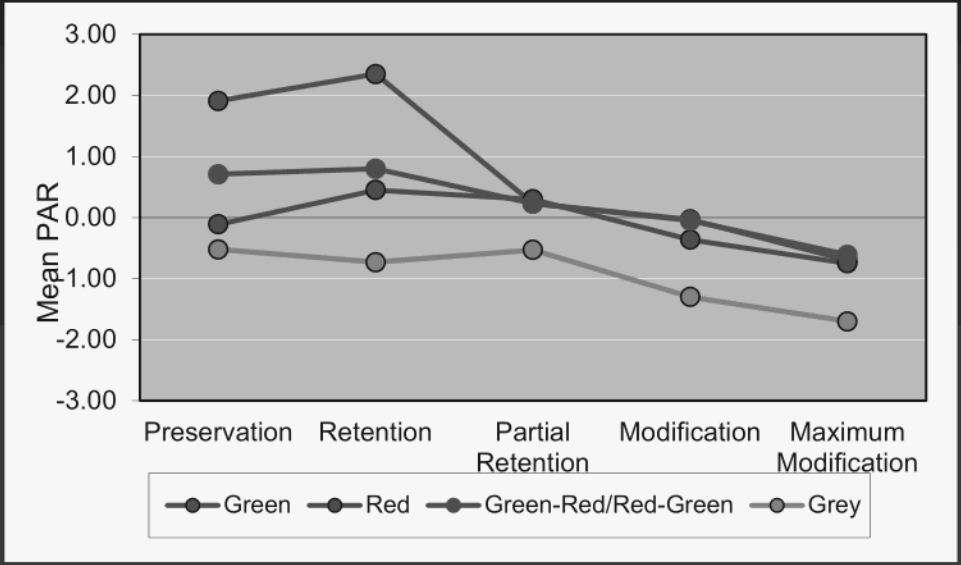
Public Response to Colour Schemes



Green landscapes most preferred,
Grey landscapes least preferred.

Public Perceptions of MPB Attack

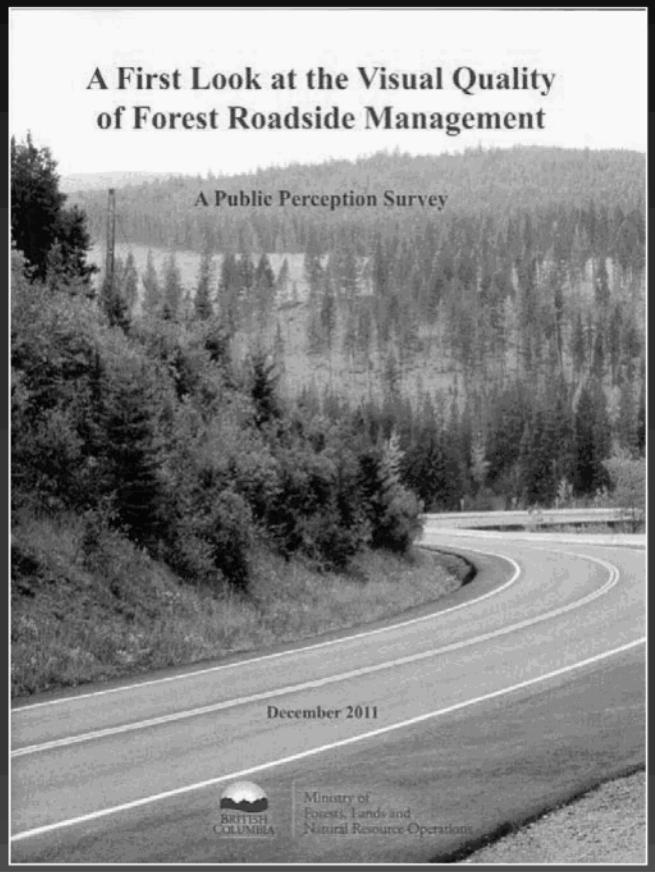
Response to different levels of harvesting within each colour.



The trend within each colour scheme is consistent. As the level of alteration increases there is a decrease in public acceptance.

Grey is disliked in the first place, and only becomes more unacceptable with harvesting.

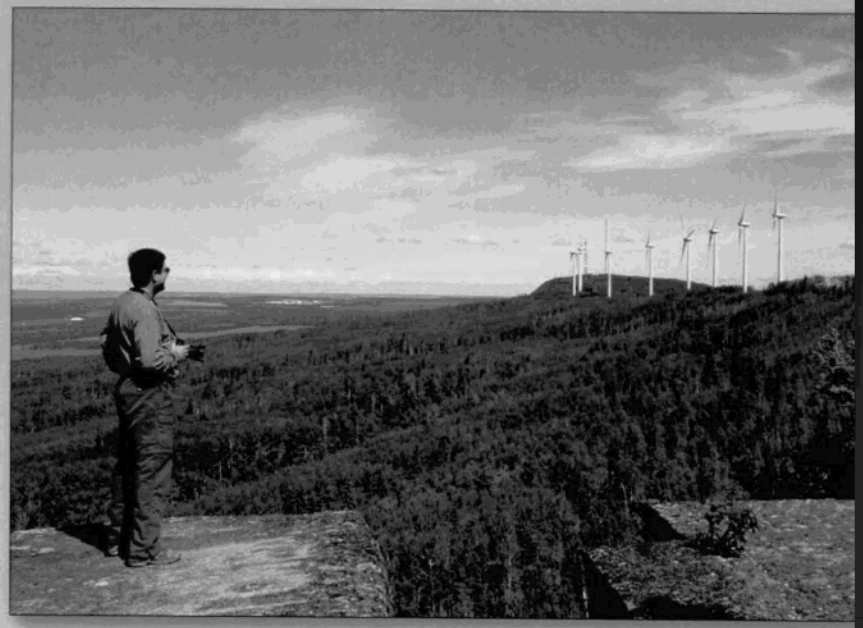
Public Perceptions of Roadside Harvesting



As the volume of wood waste increases, there is a corresponding drop in PAR.

Wind Energy Developments on Forested Landscapes

Visual Quality: The Public Response

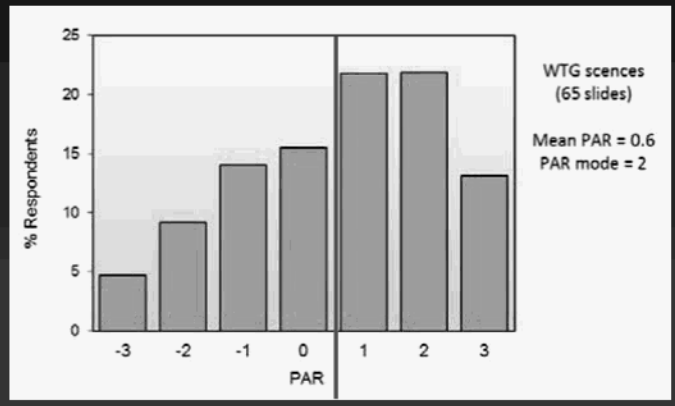


March 2015

BRITISH COLUMBIA

Ministry of
Forests, Lands and
Natural Resource Operations

A few highlights from the public perception study.



Mean PAR across all communities and all WTG scenes is +0.60

Wind Energy as a sector is seen as slightly positive

(PAR = Public Acceptance Rating)

BRITISH COLUMBIA

Take Home Messages

- The public preference trends in BC are in sync with the experts.
- Public perceptions have not changed significantly since 1989
- Individual communities may be more tolerant within a VQO class, but the trend remains the same for all communities.
- Landform percent alteration can be a reliable predictor of Visual Quality when clear-cutting.
- Good visual design can improve public acceptance by 30%.
- Increased retention means increased acceptability.
- Partial cuts or dispersed retention cuts that leave more than 24% volume will generally be accepted by the public.
- As the slope of the land increases the height of trees within an opening increase to achieve VEG.

Take Home Messages Cont.

- The response to MPB damage does not improve with harvesting.
- High levels of slash or coarse woody debris along roadsides, results in decreased PAR.
- As visible opening size along roadsides increases there is a decrease in PAR.
- Wind Energy as a sector is seen as slightly positive. Like forestry it is possible to predict the public response.

Coffee Sponsored by:

Visual Resource Management and Compliance and Enforcement

Ministry of
Forests, Lands and
Natural Resource Operations

BRITISH COLUMBIA

Compliance and Enforcement

The third pillar of the *FRPA* functional architecture is compliance and enforcement.

Compliance and Enforcement

Compliance and Enforcement (C&E) is the law enforcement Program of the Ministry of Forests, Lands and Natural Resource Operations.

It's role is to ensure that forestry laws are being followed in B.C.'s public forests, and to take action where non-compliance is believed to be occurring.

Compliance and Enforcement

Earlier in this training we learned that:

- **Results/Strategies must be consistent with OSBG for visual quality or with VQOs (FRPA 5 (1.1) and,**
- **that the holder of a FSP must ensure that the intended results specified in the plan are achieved, or the strategies are carried out. (FRPA Section 21(1).**
- **The holder of a WLP (for a woodlot) must carry out primary forest activities in the area only in a manner that is consistent with the visual quality objective (WLPPR s.59).**

Compliance and Enforcement

There are two areas under FRPA that C&E may wish to examine with respect to visuals.

1. **Review FSP Results or Strategies to ensure that they are measurable and verifiable.**
2. **Inspect post harvesting results, to ensure the visual quality objective(s) have been achieved.**

Compliance and Enforcement

To carry out their activities C & E are provided with powers to inspect and investigate.

Inspections: are conducted routinely to verify compliance. They provide government with a mechanism to detect problems and are used to encourage compliance.

Investigations: are systematic processes that collect evidence and information relevant to a suspected contravention.

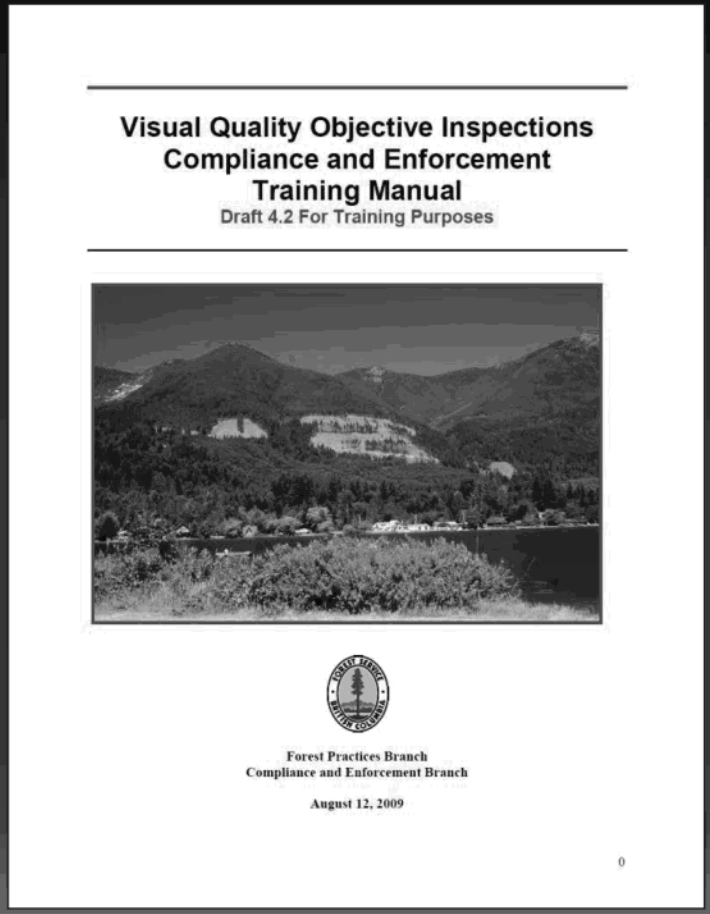
Visual Inspections

Circumstances that may trigger a visual inspection:

- there have been public complaints regarding visuals,
- harvesting results have been worse than average,
- high public concern for the landscapes with restrictive VQO's
- FPB audits have identified problems
- a C&E risk assessment identifies the risk as high,
- poor harvesting practices have affected other business opportunities.
- FREP Evaluation work has identified issues.

Visual Inspection Procedures

To assist C&E in its work, a visual inspection manual has been developed and is used for training.



Visual Quality Objective Inspections
Compliance and Enforcement
Training Manual
Draft 4.2 For Training Purposes

Forest Practices Branch
Compliance and Enforcement Branch

August 12, 2009

0

Visual Inspection Procedures

The visual inspection process evaluates compliance with the VQO from selected viewpoints using two independent measures:

1. **each category of alteration (VQO) is evaluated using an ocular assessment and compared to the FPPR s1.1 definition;**

2. **the perspective percent alteration and design elements are assessed using standards and criteria derived through research.**

These two measures are combined to determine a final rating
i.e. Clearly Not met, Not met, Inconclusive, Met or Well Met.

Note- priority is given to meeting the legal definitions (FPPR Sec. 1.1)

Compliance and Enforcement


First Nation Concern


Cabin Owner Concern

A C&E investigation may be triggered when an alleged significant VQO contravention:

- is found through an inspection, or
- is the subject of a public, industry, First nation or government complaint.
- In some cases, FREP monitoring.

Compliance and Enforcement

Non-compliance addressed by:

Administrative remedies
- **remediation orders,**
- **administrative penalties,**
- **Suspended or canceled agreements**

Court action
- **violation tickets,**
- **prosecution**

Compliance and Enforcement

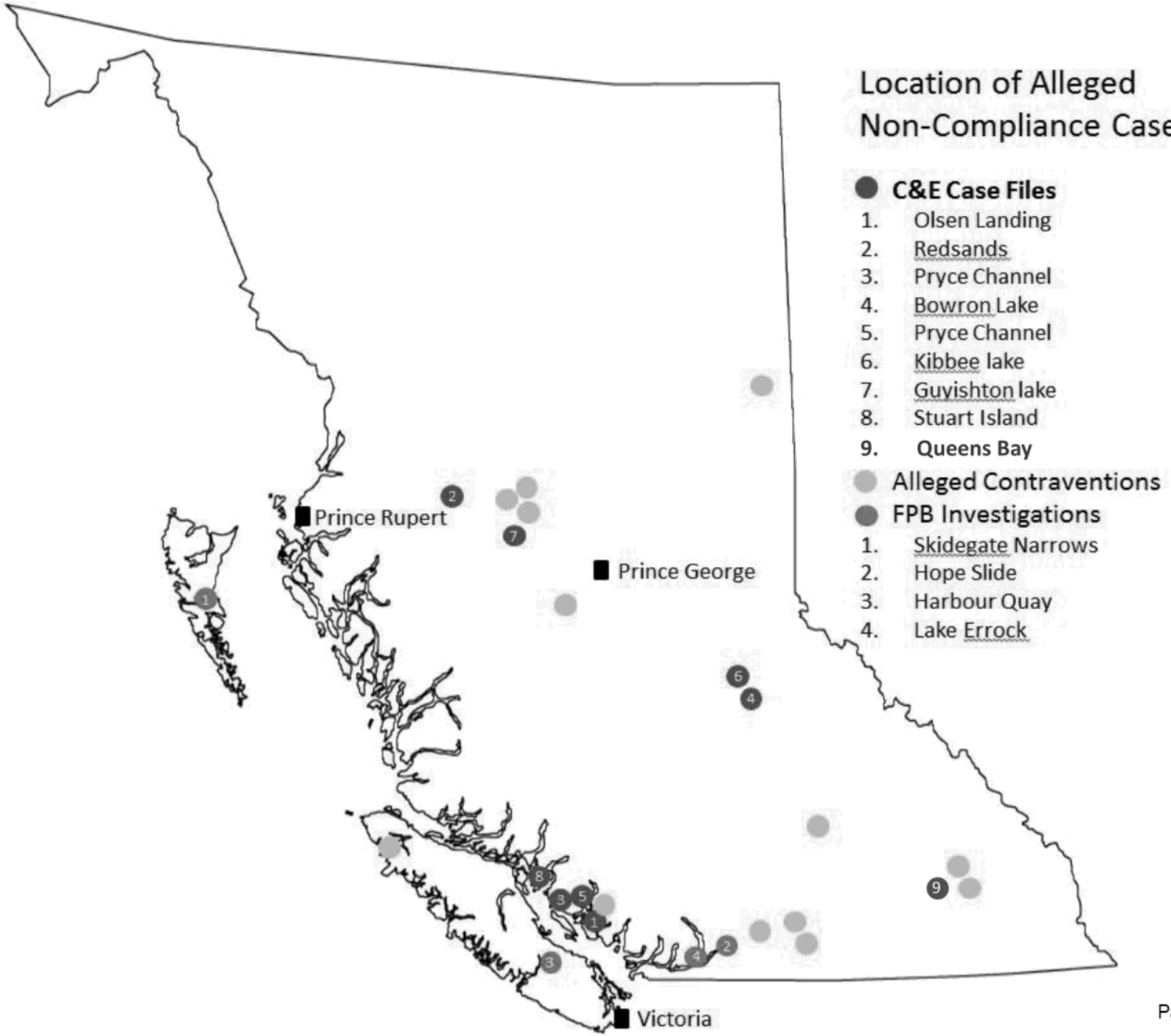
Remedies Available:

- If a DM receives information that gives him/her reason to believe that an FSP did not at the time of approval conform with FRPA 16(1.01)(a) or section 5, the DM may by order require the plan amended to conform. FRPA 16(4)
- Where intended results specified in the plan are not achieved, or the strategies are not carried out resulting in a determination of a contravention of FRPA Section 21(1) an administrative fine may be levied to a maximum of $50,000

Compliance and Enforcement

Remedies Continued:

- **Consistent non-compliance with respect to results or strategies certified by a professional, may lead to a complaint to the professional body and disciplinary action.**
- **Government can issue stop-work orders in those situations where a contravention is believed to be occurring. (FRPA Sect. 66)**
- **Government can issue remediation orders in those situations where a contravention has occurred. (FRPA Sect. 74)**


Location of Alleged Non-Compliance Cases
C&E Case Files
1. Olsen Landing
2. Redsands
3. Pryce Channel
4. Bowron Lake
5. Pryce Channel
6. Kibbee lake
7. Guvishton lake
8. Stuart Island
9. Queens Bay
Alleged Contraventions
FPB Investigations
1. Skidegate Narrows
2. Hope Slide
3. Harbour Quay
4. Lake Errock
Prince Rupert
Prince George
Victoria

Sample Cases & OTBH Determinations

PR not achieved – Contravention Assessed

PR achieved – No Contravention Assessed

PR not achieved – Contravention Assessed

PR achieved- No Contravention Assessed

PR not achieved – Contravention Assessed

R not achieved – Contravention Assessed

PR not achieved – Contravention Assessed

Questions, discussion .....

"keep an eye out for Bullwinkle"