

Free Growing Ocular Assessments

Professional Guidance
North Island Central Coast
Forest Management Leadership Team

Free Growing Ocular Assessments

- Commonly practiced by Qualified Resource Professionals
- An FMLT “Quick-Win”?
 - Save time and \$ for industry
 - Meet reporting standards
- Limited Guidance

5.8.3 Visual Assessments

A visual assessment is a relatively subjective assessment of an opening when compared with the more formal methods of silviculture surveys described in this manual. This survey method may also be referred to as a "reconnaissance survey." It should not be confused with the walk-through done before silviculture surveys.

A visual assessment should be conducted adhering to conventional survey objectives and guiding principles. However, the data gathering procedure becomes less formal. The visual assessment may be a general reconnaissance of the opening, done by walking through, driving through, or flying over the opening. The information collected will generally involve ocular estimates with few, if any, plots established and a limited amount of quantitative data.

When conducted by a skilled surveyor, the survey results can be sufficiently reliable to meet the required objectives and precision level of the survey.

Visual assessments are a valid survey method. Visual assessments can be efficiently and effectively employed where current conditions are visually evident, or where a limited amount of data is required to confirm what is visually apparent, or for safety reasons (e.g., helio-logging or hand-logging areas).

The results of the visual assessment are expected to be significantly similar to those that would result from a formal survey.

This survey is best employed when:

- the outcome of the survey is obvious and only few data are required to substantiate a recommendation (i.e., where the outcome is intuitively known);
- skilled surveyors are used to make determinations and estimates based on their experience and professional judgment;
- an update or confirmation of conditions or characteristics following a treatment is needed; and
- an opening is nearing the early free growing date, and the manager wishes to determine if the opening is on track to meet the free growing assessment period, or that an intervention is required.

For example, an experienced surveyor flies via helicopter over a 13-year-old cutblock at low altitude. There are no signs of dead or dying trees, the species composition is clearly a single species, the previously planted trees are now 4 m tall. Few if any quantitative data are required to confirm the obvious free growing nature of this block. A visual estimation of the silviculture and inventory label is acceptable.

In a second example, a free growing survey in year 9 recommends a brushing treatment, which is done at year 10, and the early free growing date is at year 12. The opening is revisited in year 12 to confirm continuing free growing status and update the inventory and silviculture label data.

The surveyor should be experienced in estimating stocking or free growing information. Sufficient data should be gathered to recommend the next treatment.

This survey method lends itself to incorporate "high tech" equipment, such as aerial assessments, video, infra-red assessments, and digital cameras.

In all cases, the data collected must satisfy the reporting requirements specified in the Silviculture Practices Regulation.

Silviculture Survey Procedures Manual - March 2008

4.6.3.4 Visual Assessments

A visual assessment is a subjective assessment of an opening when compared with the more formal methods of silviculture surveys described in this manual. This survey method may also be referred to as a 'reconnaissance survey'. It should not be confused with the walk-through done before silviculture surveys.

A visual assessment should be conducted adhering to conventional survey objectives and guiding principles. However, the data gathering procedure becomes less formal. The visual assessment may be a general reconnaissance of the stratum, done by walking through/wandering with a purpose, driving through, or flying over the opening. The information collected will generally involve ocular estimates with few, if any, plots established and a limited amount of quantitative data. Statistical validation is not applicable.

When conducted by a skilled surveyor, the survey results can be sufficiently reliable to meet the required objectives and precision level of the survey.

Visual assessment is a valid survey method where the conditions are clearly visually evident without reasonable justification for debate by experienced forest managers. If there is any chance a knowledgeable forest practitioner would find a differing result, then this method is not appropriate. Grid or vector sampling should be conducted.

Visual assessments can be efficient and effective. The results of the visual assessment are expected to be significantly similar to those that would result from a formal survey.

This survey is best applied when:

- the outcome of the survey is **obvious** and only a small quantity of data is required to substantiate a recommendation. i.e. Where the outcome is intuitively known. (i.e. obviously free growing, or grossly over maximum density, or in serious need of a brushing treatment)
- skilled surveyors (**many years** of directly related experience) are used to make determinations and estimates based on their experience and professional judgment
- an update or confirmation of conditions or characteristics following a treatment such as juvenile spacing or brushing treatments proving the treatments have been effective
- an opening is nearing the early free growing date, and the manager wishes to determine if the opening is on track to meet the free growing assessment period, or that an intervention is required

For example: an experienced surveyor flies via helicopter over a 13 year old cutblock at low altitude. There are no signs of dead or dying trees, the species composition is clearly a single species. The trees planted ten years ago are now 3m tall. Competing vegetation is limited to herbs and low shrubs. In this case, a combination of file data, visual observations, supporting photographs and brief ground based observations can meet the survey need. Very little if any quantitative data is required to confirm the obvious free growing nature of this block. This example is **obviously** free growing.

The surveyor is still expected to provide all the normally expected survey results. Inventory and silviculture labels are generated based on the visual observations. Warning: these results are expected to meet the same levels accuracy as the formal surveys. Since formal plots are not established, statistical analysis is not required.

Free Growing Ocular Assessments

- When are they appropriate?
 - Obviously FG
 - Non Complex Species Composition
 - Safety
 - Elevated risk to field personnel
 - Dangerous wildlife
 - Terrain/difficult access/stability
 - Dispersed Retention (snags)

Free Growing Ocular Assessments

- Understand the objectives and standards
 - Established in Site Plans and Higher Level Plans
 - Operable Forest – Conifer, Hardwood, Mixedwood
 - Terrain Stability (how much Dr is “OK” in a conifer block)
 - EBM
 - Habitat – Grizzly Clusters, Browse (aerial is the best option)



Free Growing Ocular Assessments

- Within the Scope of Professional Forestry
- Who is qualified (QRP)?
 - Extensive experience in silviculture/forest inventory
 - Understanding of survey techniques and statistical analysis
 - Considerable local, regional and ecological knowledge
 - Knowledge of species adaptability to climate change (mid-elevation Yc)
 - Knowledge of crop reliability, insect/disease and abiotic impacts/stand dynamics (inter/intra species competition)

FRPA (107)(6)

- A person who submits a declaration under subsection (1) remains responsible for fulfilling an obligation that under subsection (1) (a) was specified as having been met if
 - (a) the minister has determined by order under subsection (4), of which notice has been given in accordance with that section, that the obligation has not been fulfilled, or
 - (b) the person
 - (i) made a material misrepresentation or misstatement of fact in the declaration in relation to the obligation, or
 - (ii) omitted information from the declaration that the person knew or ought to have known was material to determining whether the obligation had been fulfilled.

Free Growing Ocular Assessments

- Precision – Required by Forest Inventory and Assessments Branch (FIAB)
 - **Reference:**
 - Establishment to FG Guidebook
 - Stocking and FG Surveys Procedures Manual
 - Electronic Submission Framework (ESF - legal)
 - **What's really important?**
 - Site Index (+/- 3)
 - SIBEC is relatively accurate (if eco-classification/stratification is correct)
 - Forest Cover - Inventory Layer (20% accuracy)
 - Easy in monocultures and more complex in mixed stands
 - Heights, diameter, density, etc. – All within 20% of Ministry estimate

Standards of Field Work

- 5 Plot Minimum – Uniform stocking/species composition
- Parenting
- Considerations:
 - Fall flights/rainy day flights – bad idea!
 - Photos.....lots of 'em

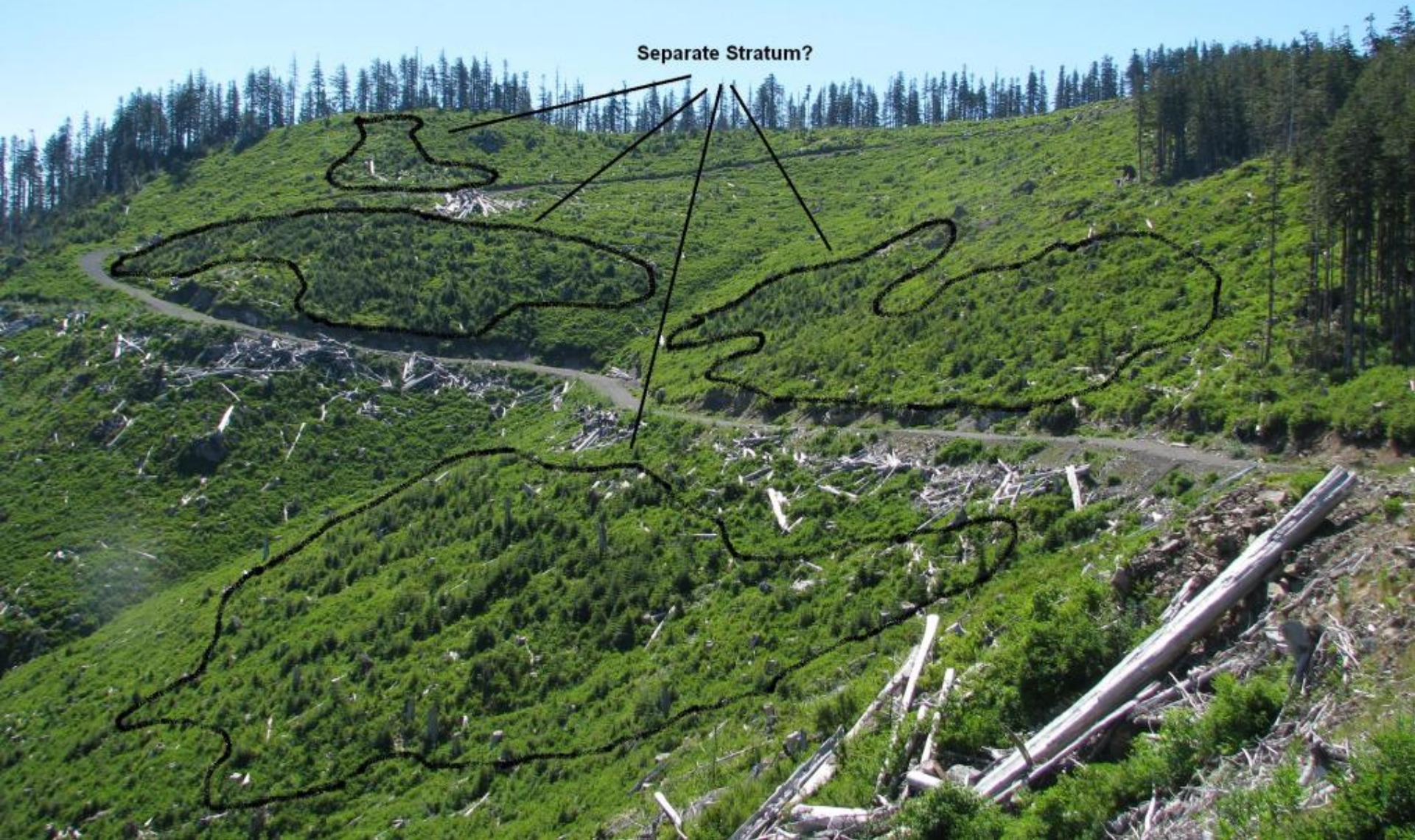


Set Yourself Up For Success

STRATIFY!

- Stratify! – Pre harvest
- Stratify! – Planting Layout, Survival Surveys
- Stratify! – Regeneration Survey

Separate Stratum?



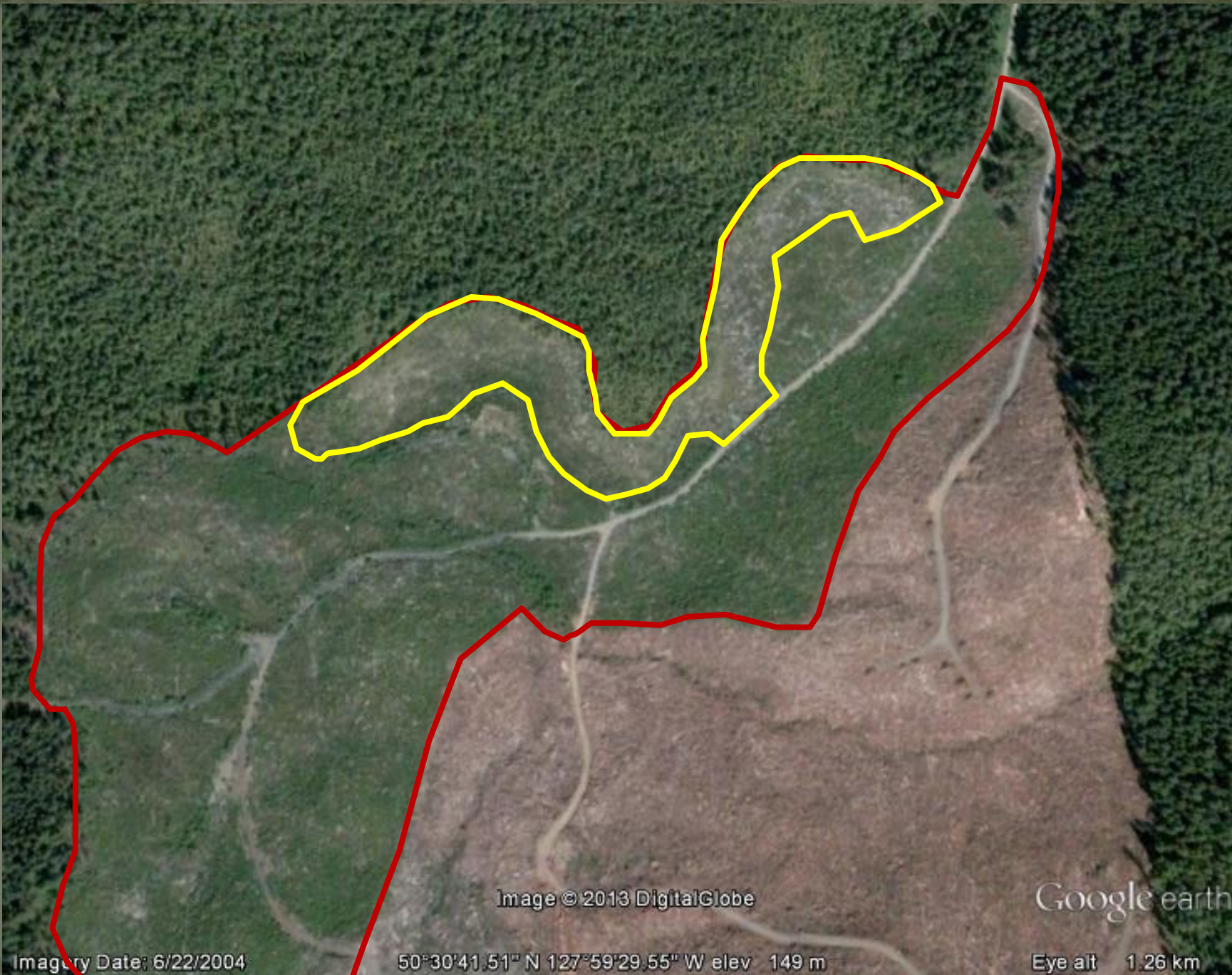
A satellite image from Google Earth showing a forested landscape. A red line outlines a large, irregular area, while a yellow line outlines a smaller, more complex area within the red boundary. The terrain is a mix of green forest and brownish, cleared or sparsely forested patches. A network of thin, light-colored lines, likely roads or trails, is visible across the landscape. The image is framed by a dark, textured border.

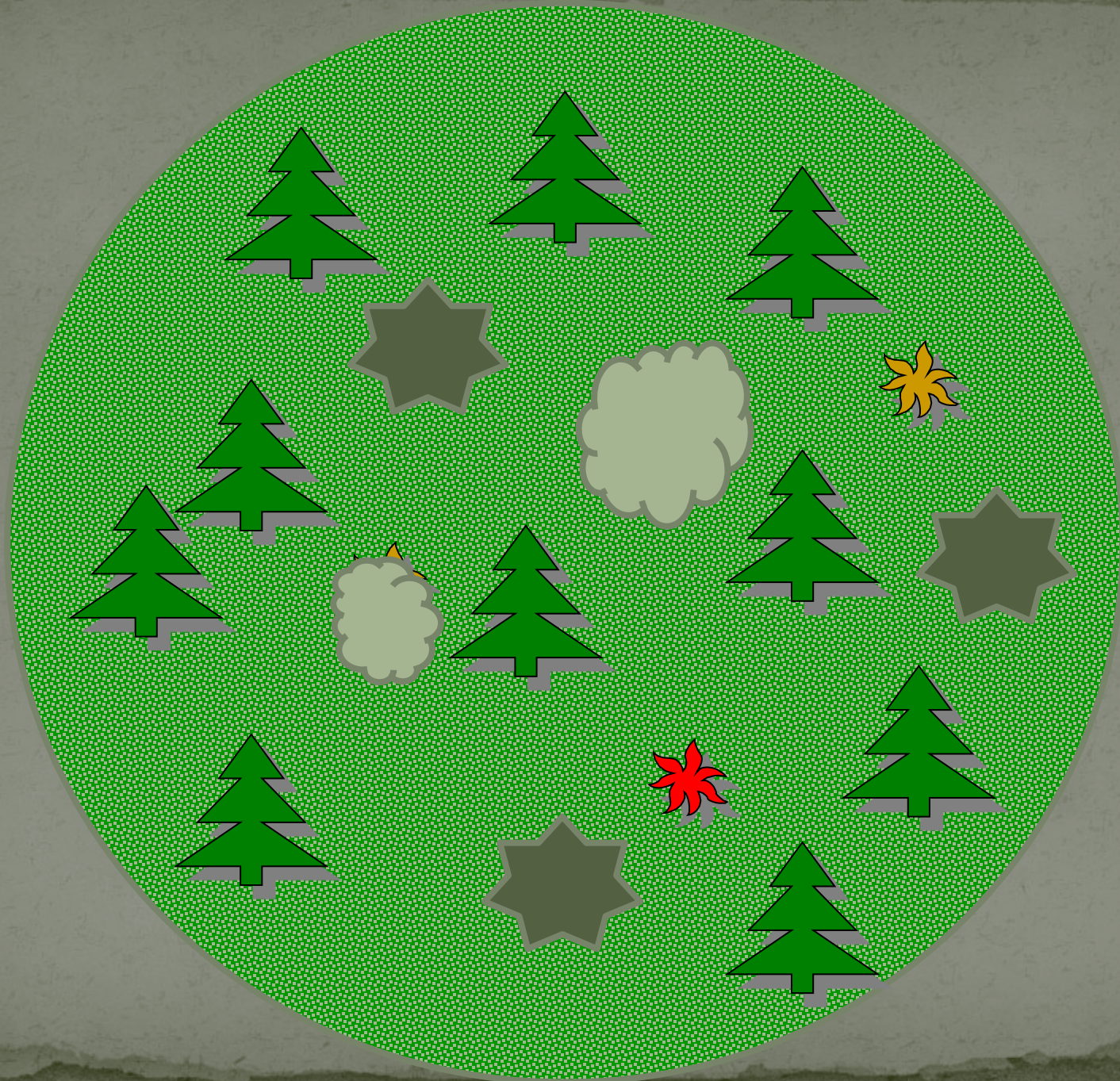
Image © 2013 DigitalGlobe

Google earth


Imagery Date: 6/22/2004

50°30'41.51" N 127°59'29.55" W elev 149 m




Eye alt 1.26 km







Species Composition

 = Hw_{10} (1000 sph)

 +  = $Hw_{77}Ba_{23}$ (1300 sph)

 +  +  = $Hw_{62}Ba_{19}Yc_{13}Cw_6$ (1600 sph)

 +  +  +  = $Hw_{56}Ba_{16}Yc_{11}Cw_6Dr_{11}$
(1800 sph)





Free Growing Ocular Assessments

- What was the species composition?
- I hope you took pictures!



1m

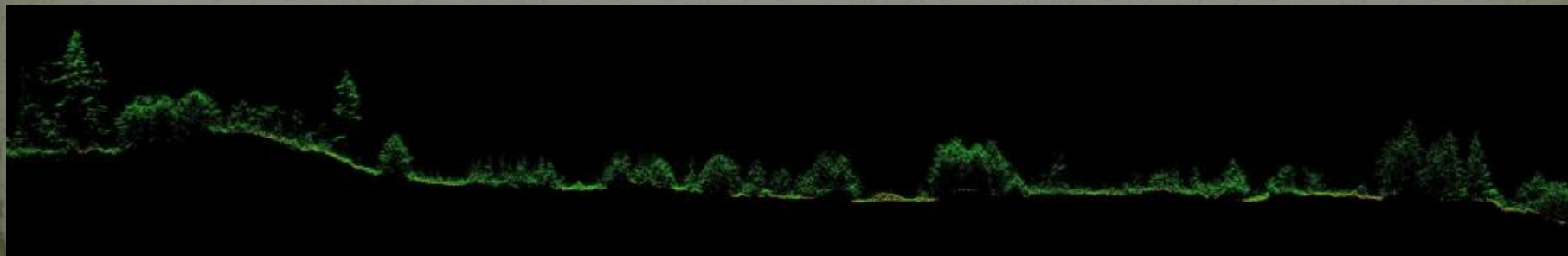
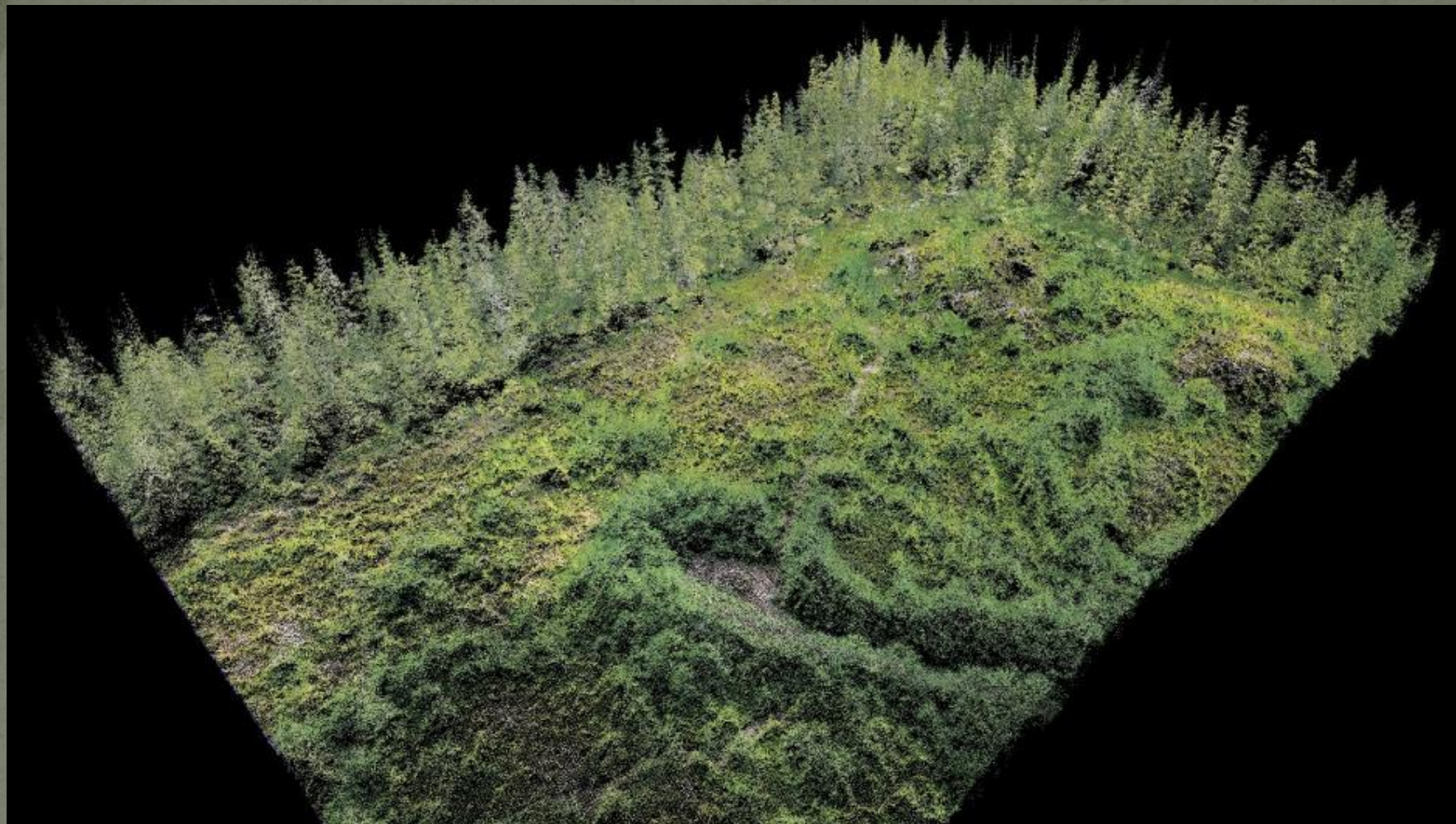
Free Growing Ocular Assessments

- Remote sensing
 - Photos (Ortho)
 - Satellite Telemetry – RADAR/Spectral (Low Precision)
 - LIDAR
 - Google Earth (Stratification)

Free Growing Ocular Assessments



Orthophotography



Free Growing Ocular Assessments

- What's next?



Free Growing Ocular Assessments

- Testing the Assessment
 - Are you sure?
 - Do your QRP peers agree?
 - Can you defend your assessment?
 - Employer/Client is off the hook after 15 months (maybe), the QRP/Declaring Forester is not!

Free Growing Ocular Assessments

Anything else?