Soil disturbance from Mountain Pine Beetle salvage logging

BC MoFR soils team: Shannon Berch, Chuck Bulmer, Bill Chapman, Sandy Currie, Mike Curran, Stephane Dubé, Kirsten Hannam, Graeme Hope, Richard Kabzems, Marty Kranabetter, Brian Wallace

Outline:

- Evidence of the problem
- Factors contributing to the problem
- Extent of the problem
- Solutions to the problem

Outline:

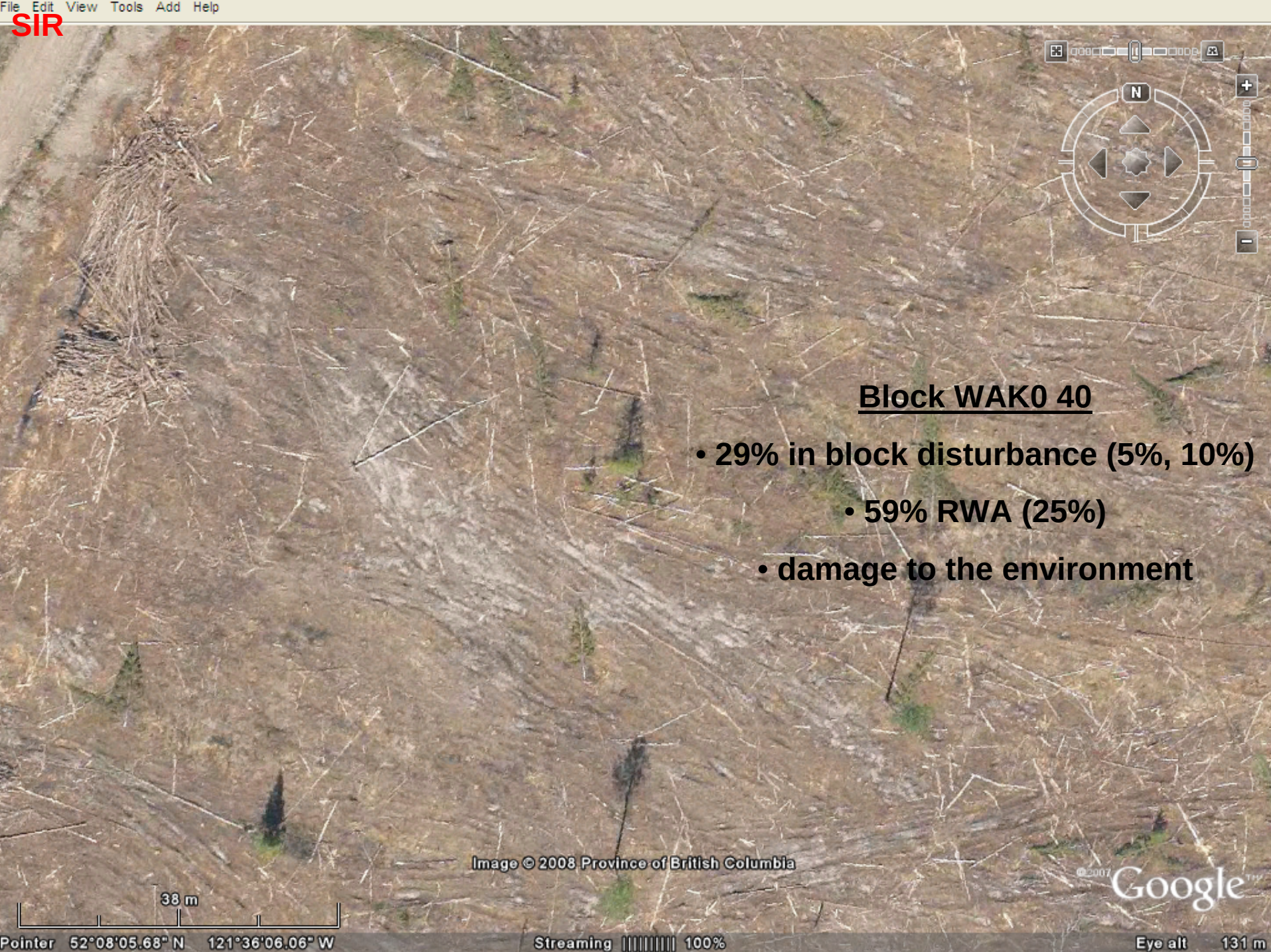
- **Evidence of the problem**
- **Factors contributing to the problem**
- **Extent of the problem**
- **Solutions to the problem**

- **Regional soil scientists (Stéphane Dubé NIR, Bill Chapman and Graeme Hope, SIR) called in by C&E**
- **FREP results indicate that there is extreme soil disturbance associated with some MPB salvage logging**


SIR






File Edit View Tools Add Help
SIR
N
Block WAK0 40
• 29% in block disturbance (5%, 10%)
• 59% RWA (25%)
• damage to the environment
Image © 2008 Province of British Columbia
©2007 Google
38 m
Pointer 52°08'05.68" N 121°36'06.06" W
Streaming 100%
Eye alt 131 m


Deep ruts


6.18. 2008
Ruts fill with water


NIR
Should have built a road
9 1:01 PM


NIR
Poor rehab



Dying seedling in poor rehab


NIR
Extreme rutting


NIR
Soil structure destroyed

Outline:

- Evidence of the problem
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- **Stand of dead trees - reduced evapotranspiration therefore soils wetter**
- **Economics – stumpage, equipment, rehabilitation, penalties**
- **Guidance and training – FPC to FRPA shift, personnel turnover**

Outline:

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- **Assessing the extent of the problem (C&E Pilot Project)**

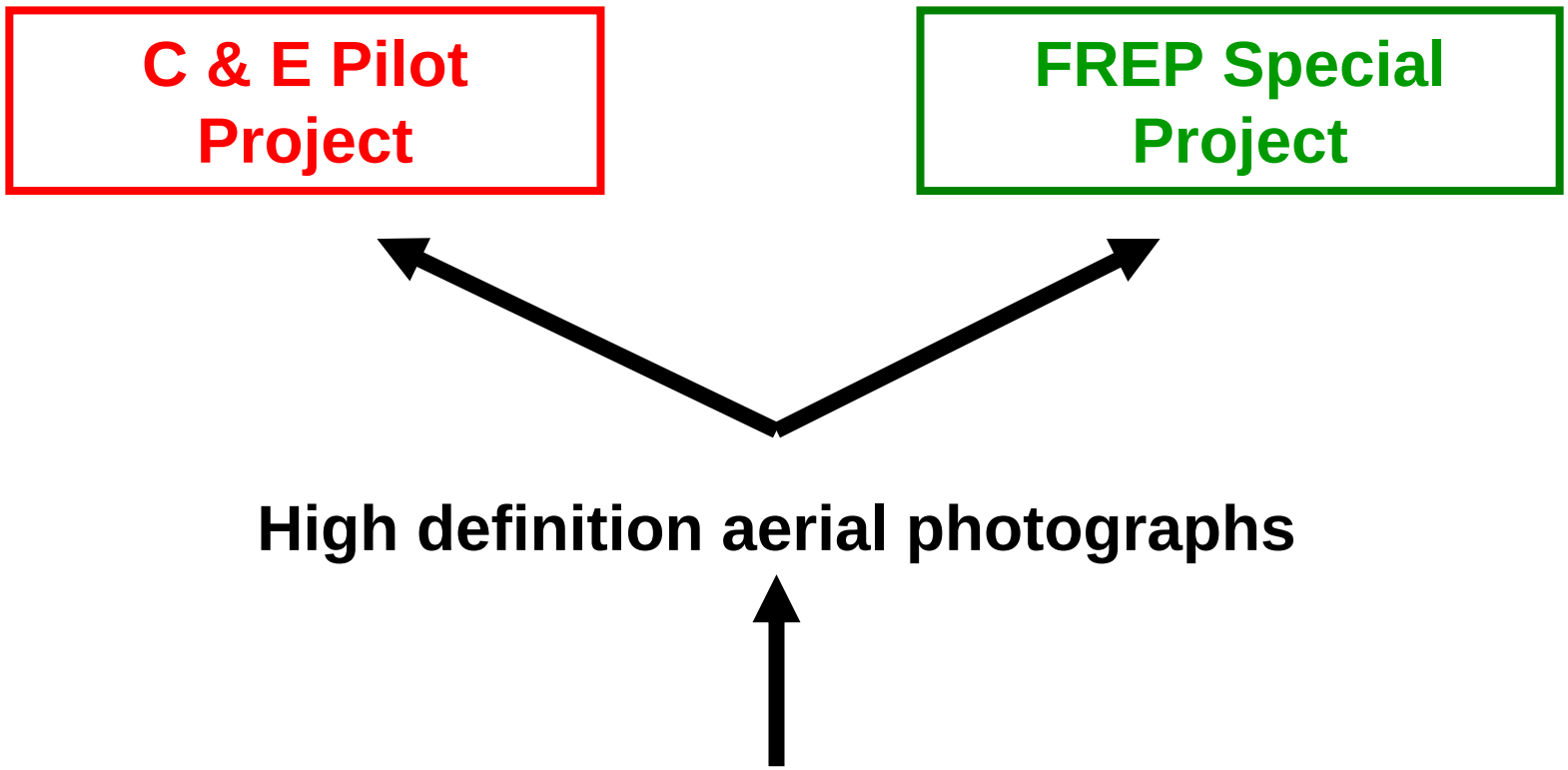
- **Assisting C&E to carry out extensive reconnaissance (C&E Pilot Project)**

- **Monitoring MPB salvage harvesting for long-term productivity (FREP Special Project)**

- **Assessing the extent of the problem (C&E Pilot Project)**

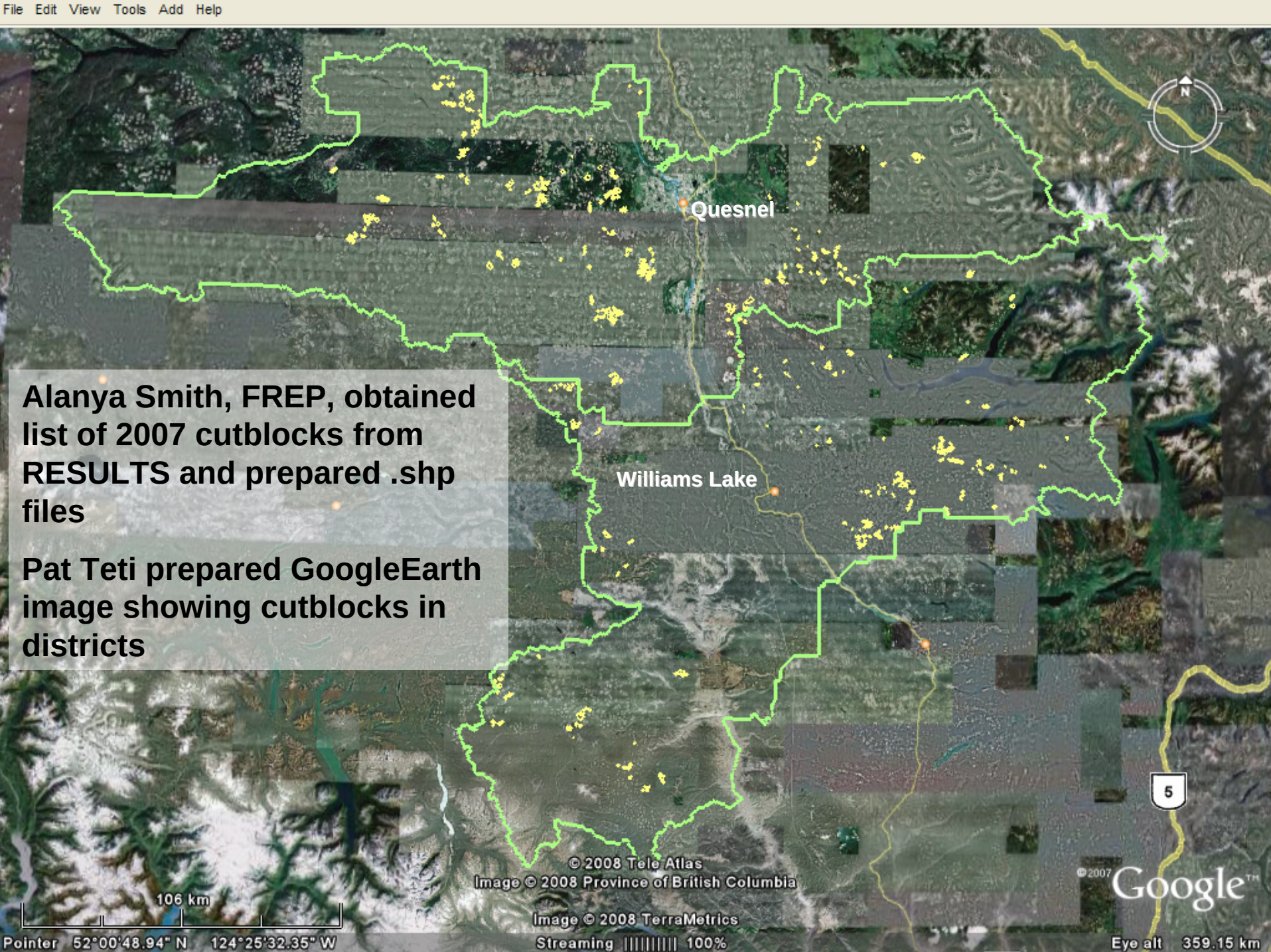
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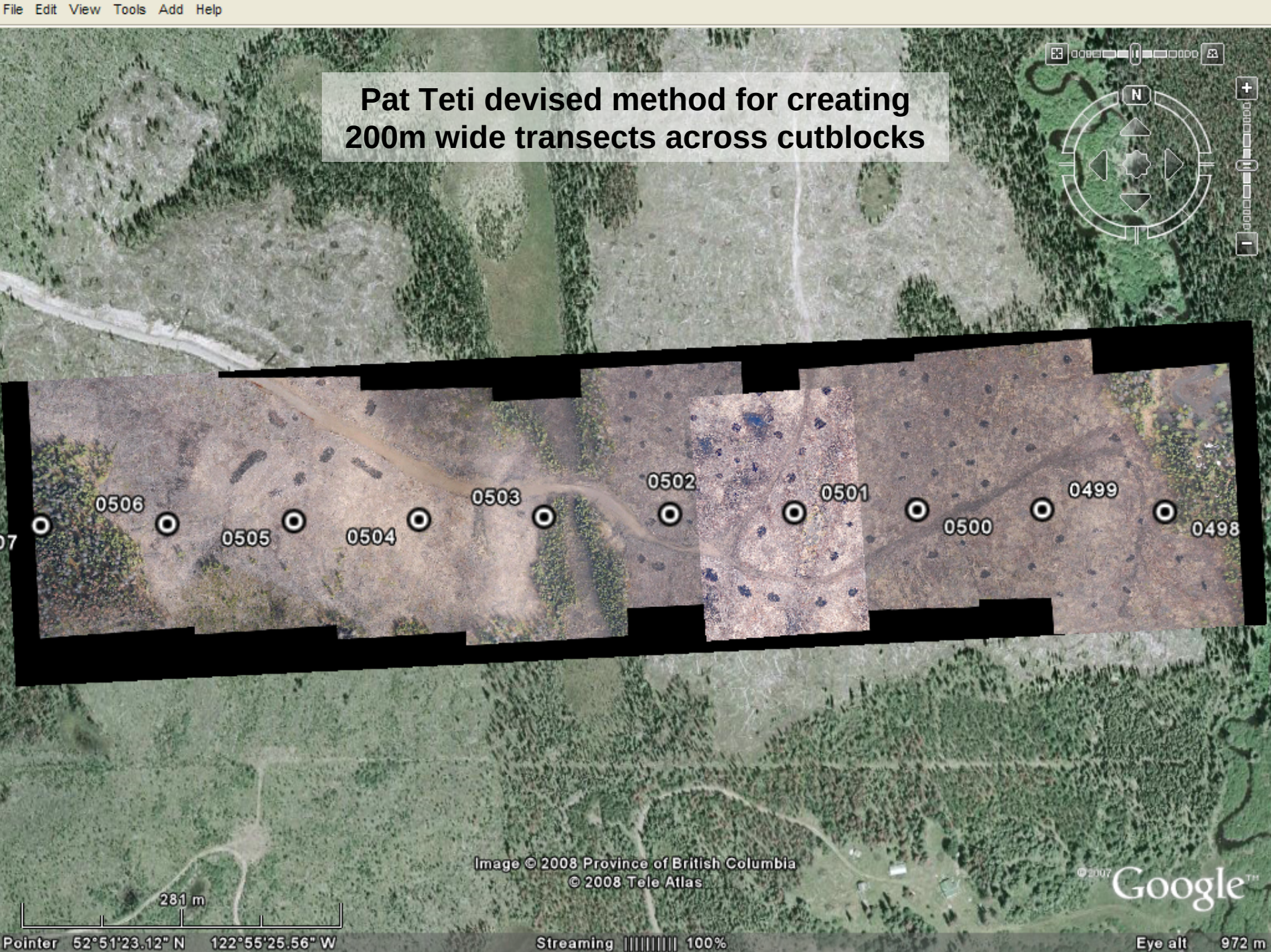
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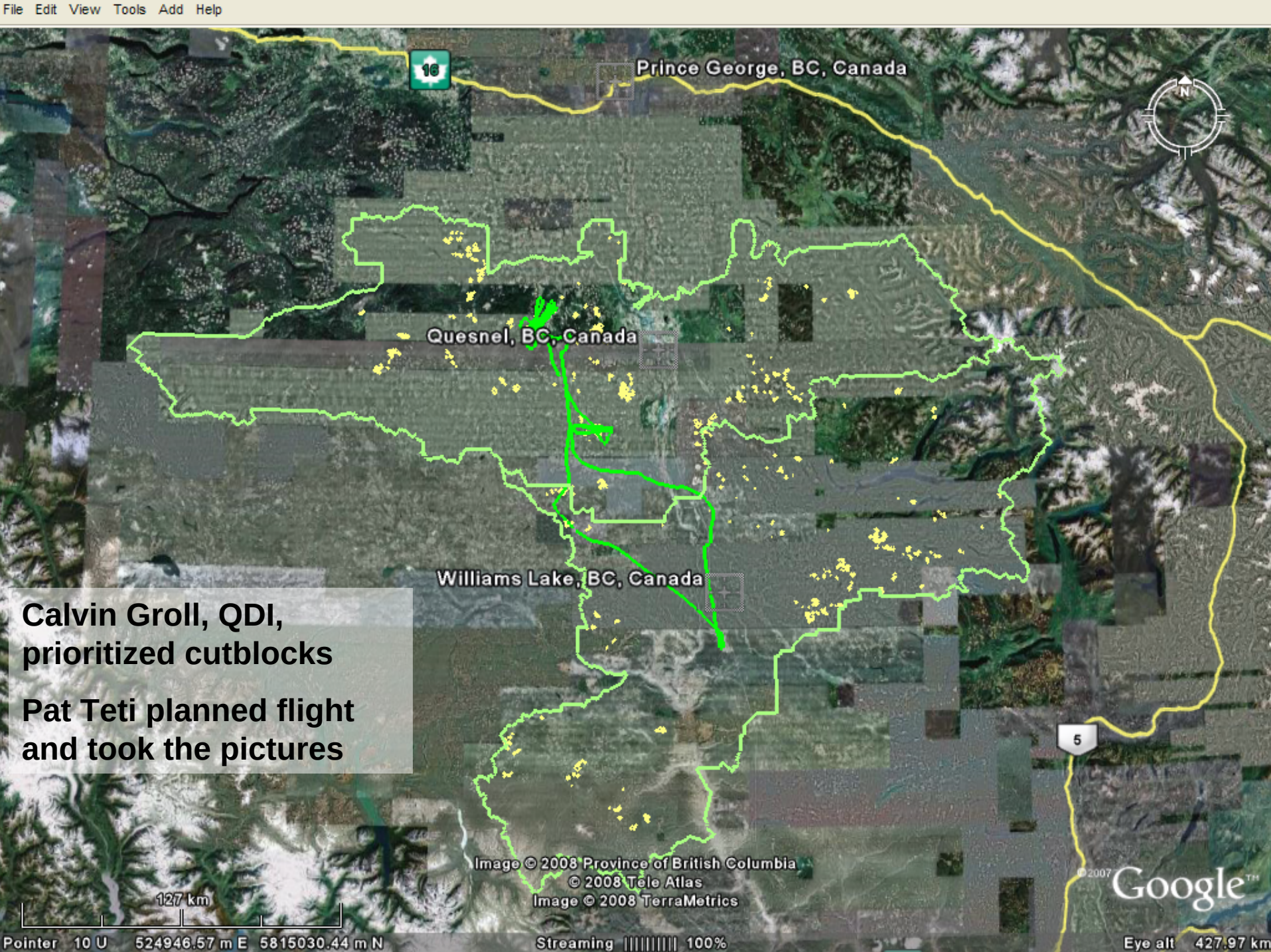

C & E Pilot Project
FREP Special Project
High definition aerial photographs
Cutblocks in Quesnel and Central Cariboo Districts

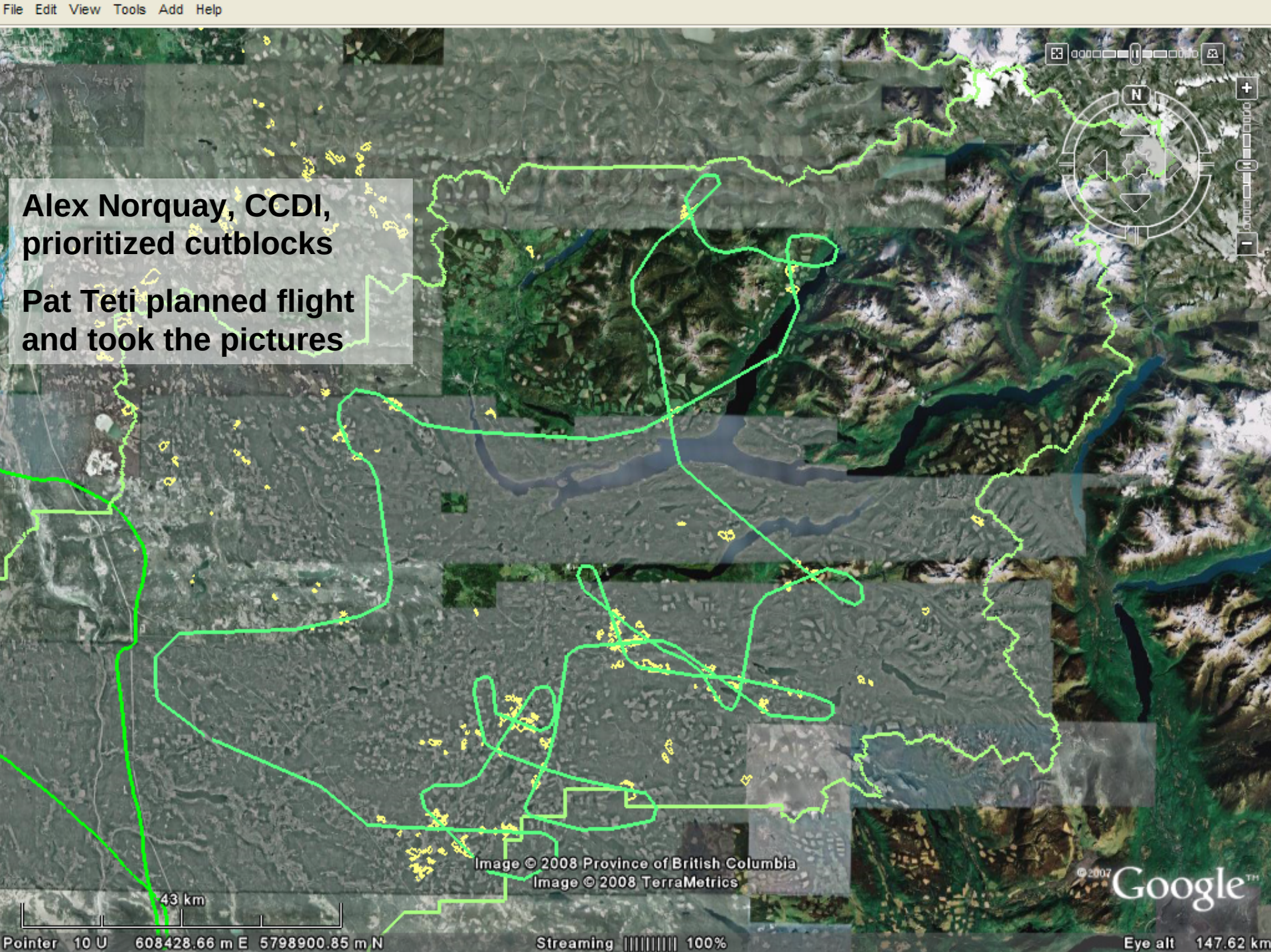
C&E Pilot project (2008/9):

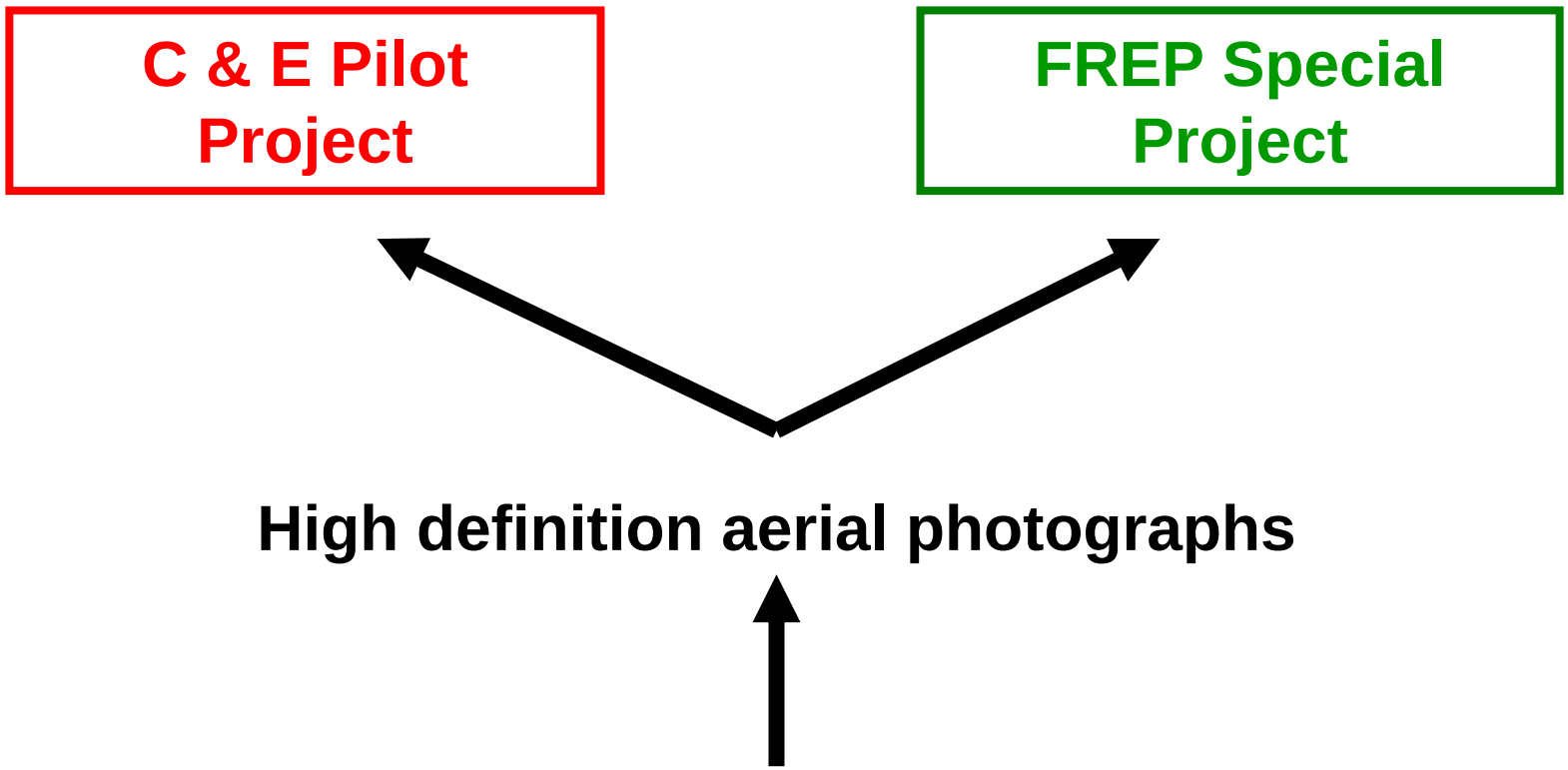
1. districts (Calvin Groll, Quesnel; Alex Norquay, Central Cariboo) prioritize areas of concern from list of 2007 cutblocks from RESULTS (Alanya Smith, FREP)
2. Pat Teti takes aerial photos of a large number of MPB salvage cutblocks in districts
3. district C&E staff with regional scientists (SIR - Pat Teti, hydrology; Bill Chapman, soils; other) assess blocks using photos
4. district C&E prioritizes blocks of concern
5. team writes procedure for further use by C&E
6. team prepares report on pilot project
7. team posts photos on FTP site for in-house demonstration, training, documentation
8. team coordinates with FREP special project


File Edit View Tools Add Help
Quesnel
Williams Lake
Alanya Smith, FREP, obtained list of 2007 cutblocks from RESULTS and prepared .shp files
Pat Teti prepared GoogleEarth image showing cutblocks in districts
5
© 2008 Tele Atlas
Image © 2008 Province of British Columbia
Image © 2008 TerraMetrics
106 km
Pointer 52°00'48.94" N 124°25'32.35" W
Streaming 100%
Eye alt 359.15 km


File Edit View Tools Add Help
Pat Teti devised method for creating
200m wide transects across cutblocks
0506
0505
0504
0503
0502
0501
0500
0499
0498
Image © 2008 Province of British Columbia
© 2008 Tele Atlas
281 m
Google
Pointer 52°51'23.12" N 122°55'25.56" W
Streaming 100%
Eye alt 972 m


File Edit View Tools Add Help
16
Prince George, BC, Canada
N
Quesnel, BC, Canada
Williams Lake, BC, Canada
Calvin Groll, QDI, prioritized cutblocks
Pat Teti planned flight and took the pictures
5
Image © 2008 Province of British Columbia
© 2008 Tele Atlas
Image © 2008 TerraMetrics
127 km
©2007 Google
Pointer 10 U 524946.57 m E 5815030.44 m N
Streaming 100%
Eye alt 427.97 km


File Edit View Tools Add Help
Alex Norquay, CCDI, prioritized cutblocks
Pat Teti planned flight and took the pictures
Image © 2008 Province of British Columbia
Image © 2008 TerraMetrics
© 2007 Google
43 km
Pointer 10 U 608428.66 m E 5798900.85 m N
Streaming 100%
Eye alt 147.62 km


C & E Pilot Project
FREP Special Project
High definition aerial photographs
Cutblocks in Quesnel and Central Cariboo Districts

FREP Special Project (2008-2010)

Integrated assessment of 6 key FRPA values in MPB salvage area

Shannon Berch (Research Branch), Alanya Smith (Forest Practices Branch, FREP), Kerri Howse (Stewardship, Central Cariboo), Mike Pelchat (Stewardship, Quesnel), and Resource Value Team Leaders

- high definition aerial photographs for FREP data collection
- 6 key resource values: soils, visuals, water quality, stand level biodiversity, timber harvest, riparian/fish passage
- is MPB salvage logging affecting long term forest productivity?
- is there a need to change policy?

Outline:

- **Evidence of the problem**
- **Factors contributing to the problem**
- **Extent of the problem**
- **Solutions to the problem**

- **Improve C&E ability to detect problems**
- **Determine whether policy change is needed**
- **Revitalize soil conservation training**

- field training on soil disturbance
- field cards
- guidance documents
- professional development
- videos
- successful rehab

- **Communicate existing and emerging issues to Licensees in letter from Regional Executive Director, in presentation to TSA steering committee, etc.**
- **Reinstate the Site Degradation and Rehab Committee with Ministry and Industry members**
- **Other?**