Implementing CHPS in Ernslaw One Ltd Forest Operations

Megan Costello
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Outline

- Introduction to CHPS
- East Coast Region Description
- Harvest Planning Process
- Experience with CHPS – Field Verification
- Case Studies
- Summary

Cable Harvest Planning Software

Cable harvest planning = where is there deflection?

- Analysis of topography
- Operational decisions
- Payload analysis
- Optimising road density
- Communication
Cable Harvesting Planning Solution

**Characteristics:**
- Run as a feature in ARC GIS
- Ability to run multi-span analysis
- Based on calculations developed by Glen Murphy
- Pre-loaded haulers and carriage systems
- Developed locally

Ernslaw One Ltd – East Coast Operations

- 1,400-1,600 ha planned annually
- Total forward planning in Harvest Manager: 6,400 ha
- Proportion of Ground Based vs. Hauler:
  - GB: 22% (1,412 ha)
  - H: 77% (4,931 ha)
- Average size of setting:
  - GB: 3.85 ha
  - H: 8.64 ha
- Road Density: 3km per 100 ha or 30m/ha
Harvest Planning Process

- Initial map planning
- Contours: mostly 5m, some 10m
- Field verification
- Analysis
- Further field verification if required
- ATLAS Harvest Manager data entry
Analysis History

- Prior to CHPS, exclusive use of CYANZ
- CYANZ results considered accurate with a conservative leaning
- Active use of CHPS from March 2013

How to use CHPS?

1. Define parameters
2. Define analysis requirements
3. Locate hauler and tailholds
4. Profile payload analysis
5. Outputs
1. Define parameters

2. Define analysis parameters
3. Locate Hauler and Tailholds

4. Profile Payload Analysis
Field Verification of CHPS

- Failure to achieve solution
- Reliability of results?
- “Calibrating our Eye”
Methodology

- GPS points
- Average stems/drag and average piece size data
- Estimate of average payload per drag
- Compared estimate to CHPS & CYANZ output

Case Study: Moonlight Forest

Planning Stage:
- 10m contours
- Planned using CYANZ in 2011
- 90 ft. tower (Madill 046)
- Butt Rigging 220 lbs./100kg
- System: Live/Standing

Contractor:
- Tower: Madill 172
- Carriage: ACME S28 with three 5m chokers
- System: Standing & Live skyline
CYANZ

Volume Hauled
Using:
Standing Skyline: C02 & C38
Live Skyline: C42

CHPS

Volume Hauled
Using:
Standing Skyline: Y1; P1 & P2
Live Skyline: Y2; P1
**CHPS**
Volume Hauled Using:
Live Skyline: All profiles

**CYANZ**
Volume Hauled Using:
Live Skyline: All Profiles
C38 = Y1; P2
Moonlight: Live Skyline

\[ C42 = Y2; P1 \]
<table>
<thead>
<tr>
<th>Cable Line</th>
<th>Estimated Min Payload (kg)</th>
<th>Average Actual Payload (kg)</th>
<th>Average Piece Size (kg)</th>
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<tr>
<td>CYANZ CHPS</td>
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<td>C02/Y1; P1</td>
<td>7,768</td>
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Benefits of Using CHPS

- Visuals
- Fits in with existing systems
- Ease and speed
- Map Accuracy
- User-friendly reporting function

Summary

- Great start
  - Improved discussions
  - Delivering better plans
- Looking forward to:
  - New calculations
  - Additional methods
  - New user features
- Reasonably happy with reflection of actual harvesting
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Thanks!

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- Harley Prowse
- Ernslaw Engineering Team