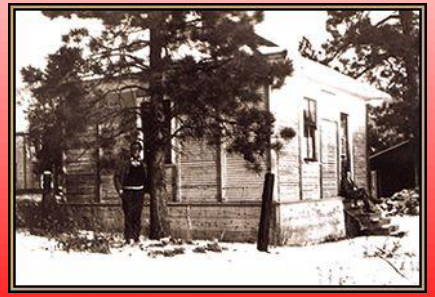
Use of Semiochemicals in a Mixed MPB/WPB Infestation: Nicola Ranch Case Study 2007- 2009

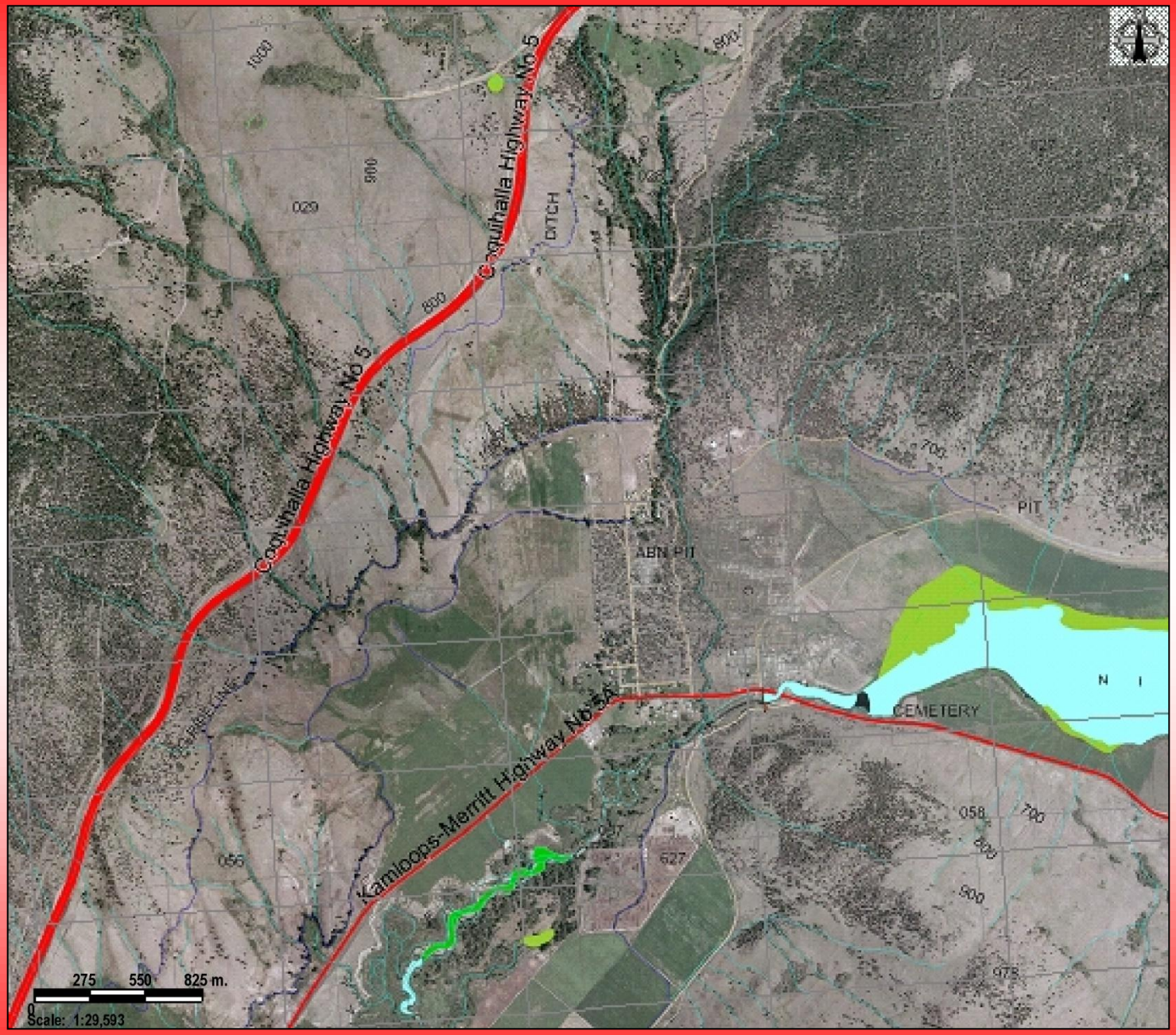
Background Information

- MPB epidemic in BC: Ponderosa pine is “best” host for MPB and “worst” stand type for verbenone protection
- In southern BC WPB accompanying MPB in Ponderosa pine
- Verbenone is in operational use but is not recommended when 50% of the trees are infested
- WPB don’t respond as strongly to verbenone as do MPB
- Pulp and lumber industry not doing well

People are willing to try extreme measures to try and protect trees

Nicola Ranch occupies a heritage site dating back to late 1800's, with numerous old buildings and mature Ponderosa pine at risk to beetles.

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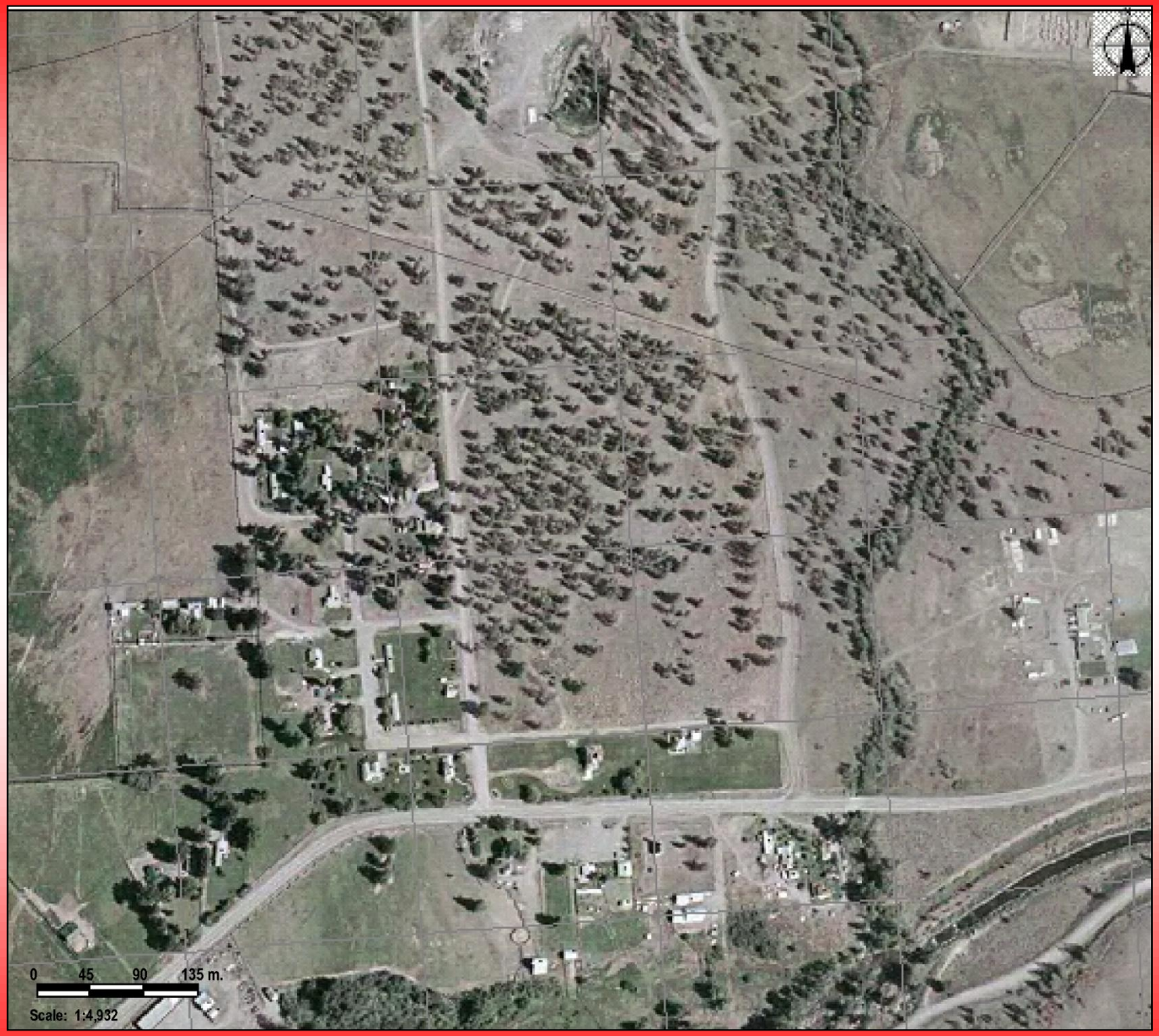
0 45 90 135 m.
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Chronology of the Beetle Management

2006

- 12 trees at north east end of town site infested

2007

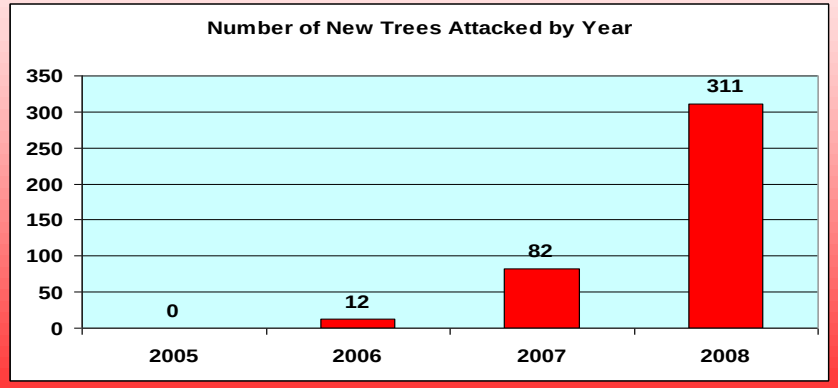
- 134 perimeter trees near heritage buildings treated with 140 each verb + GLV, no attacks
- 80 verb + 40 GLV deployed at 20 M spacing around the perimeter of the central zone, 2/80 verb and 5/40 GLV trees attacked, 75/402 untreated trees attacked

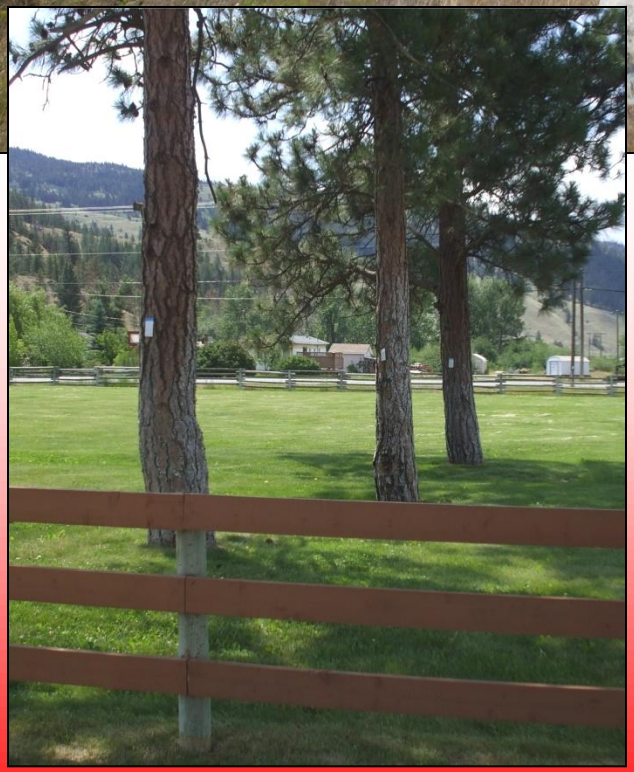
2008

- 32 WPB traps deployed trees between Coyote Valley Rd and Mill Creek Rd in a grid at 50 M spacing, 7000 WPB captured
- Early July first 16 traps and later 8 more traps switched to MPB lures, 17,000 MPB captured
- 311 new attacked trees in the healthy trees in the central zone. A cumulative total of 359/764 trees survive (~47%)
- 134 trees near heritage buildings treated with 140 each verbenone and GLV all remained beetle-free

2009

- Aggressive removal of 1,000's dead or infested tree, including the former trapping site
- 134 trees near heritage buildings treated with 140 each of verb + GLV
- 4 MPB and 4 WPB traps deployed to monitor beetle levels





DEERE

227
251
226
DCT
CHAMBERS
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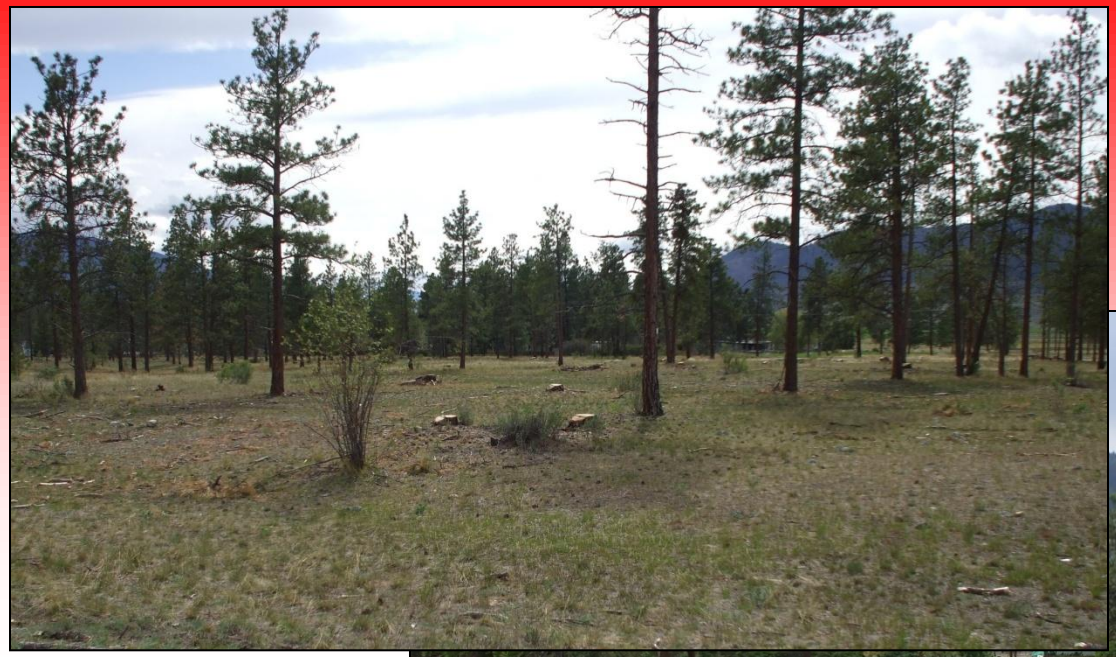

Analysis and Summary

- **2007 verb and GLV attempted area protection of the central zone used too few devices, effective radius per device ~5M, devices deployed at 20 M, never the less trees were saved**
- **2008 a total of ~24,000 beetles were removed by the traps. If it takes ~100 beetles to injure a tree this is enough beetles to have "saved" 240 trees**
- **If the rate of infestation had remained at 2006-07 levels (6.8x) in 2007-08 there would have been 557 infested trees. We observed 311 new attacks (factor of 3.8x)**
- **Removing dead trees, prevailing wind direction and having the perimeter trees being "pampered" were contributing factors to preserving these trees**
- **There are still 359 live trees in the central management zone. 100% of the 134 highest value perimeter trees are beetle free**

Nicola ranch town site remains an "oasis" with green trees while pine in the surrounding areas have been wiped out by beetles. Ranch management is pleased.

The Crew That Made This Work Possible

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