



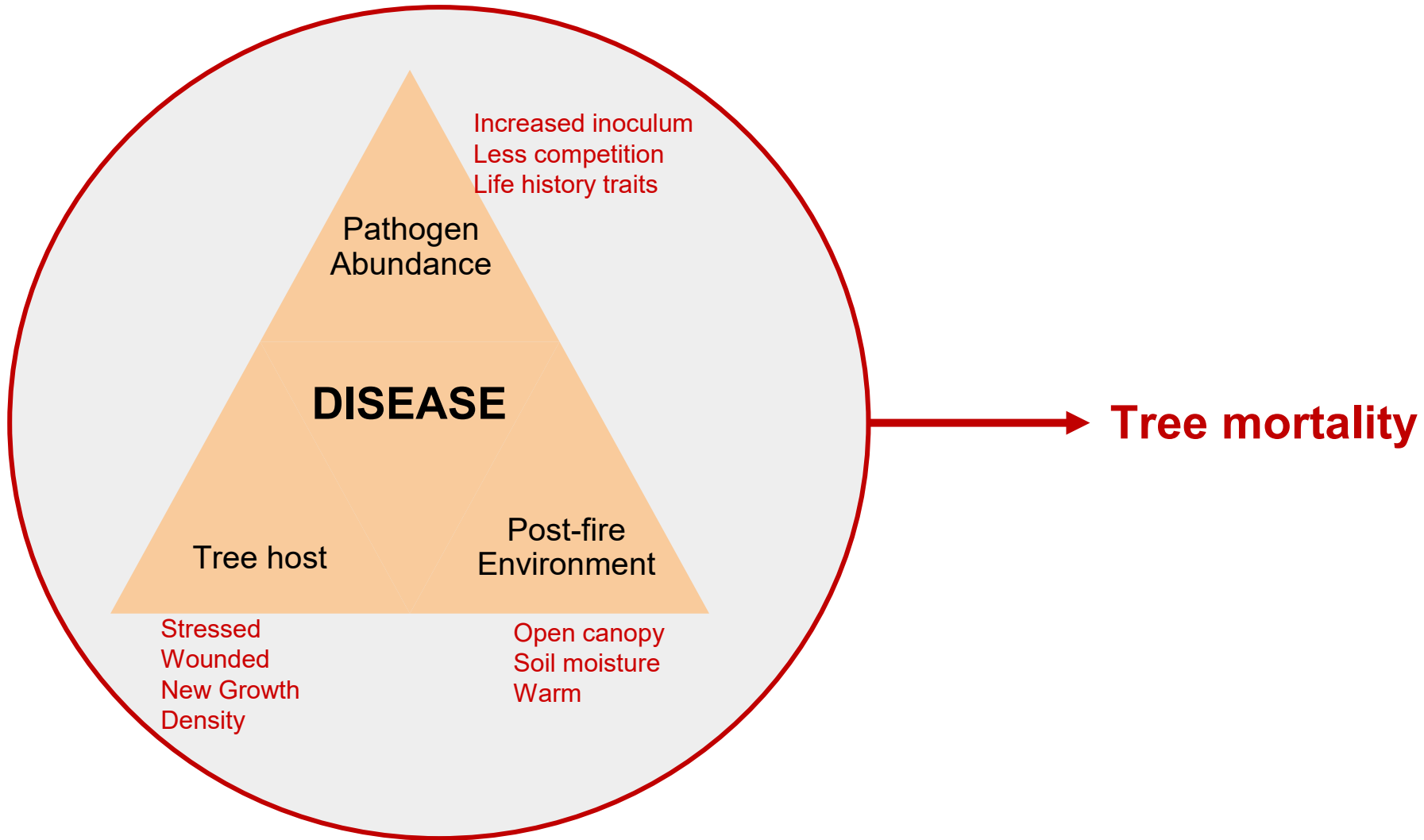
***Coniophora puteana* and
Sequoia sempervirens decay
after the 2020 CZU Lightning
Complex Fire**

Liz Rennie, UC Santa Cruz

CZU Lightning Complex Fire

- August 2020
- 11,000 lightning strikes in Santa Cruz Mountains became one massive fire
- 35,009 hectares burned
- 1,490 buildings and 911 homes destroyed



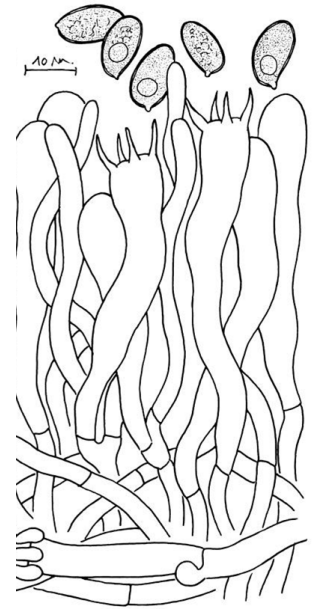


Coniophora puteana, 'cellar fungus'

- Brown wet rot at base of stem
- Needs high water content (50-60%)
- **Signs:** No external indicators unless host is injured
 - Brown–black Mycelial cords
 - Cream–brown center bounded by white margins
- **Symptoms:** Timber becomes dark brown and cracks
 - 40% weight loss in 4 months



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May 2023

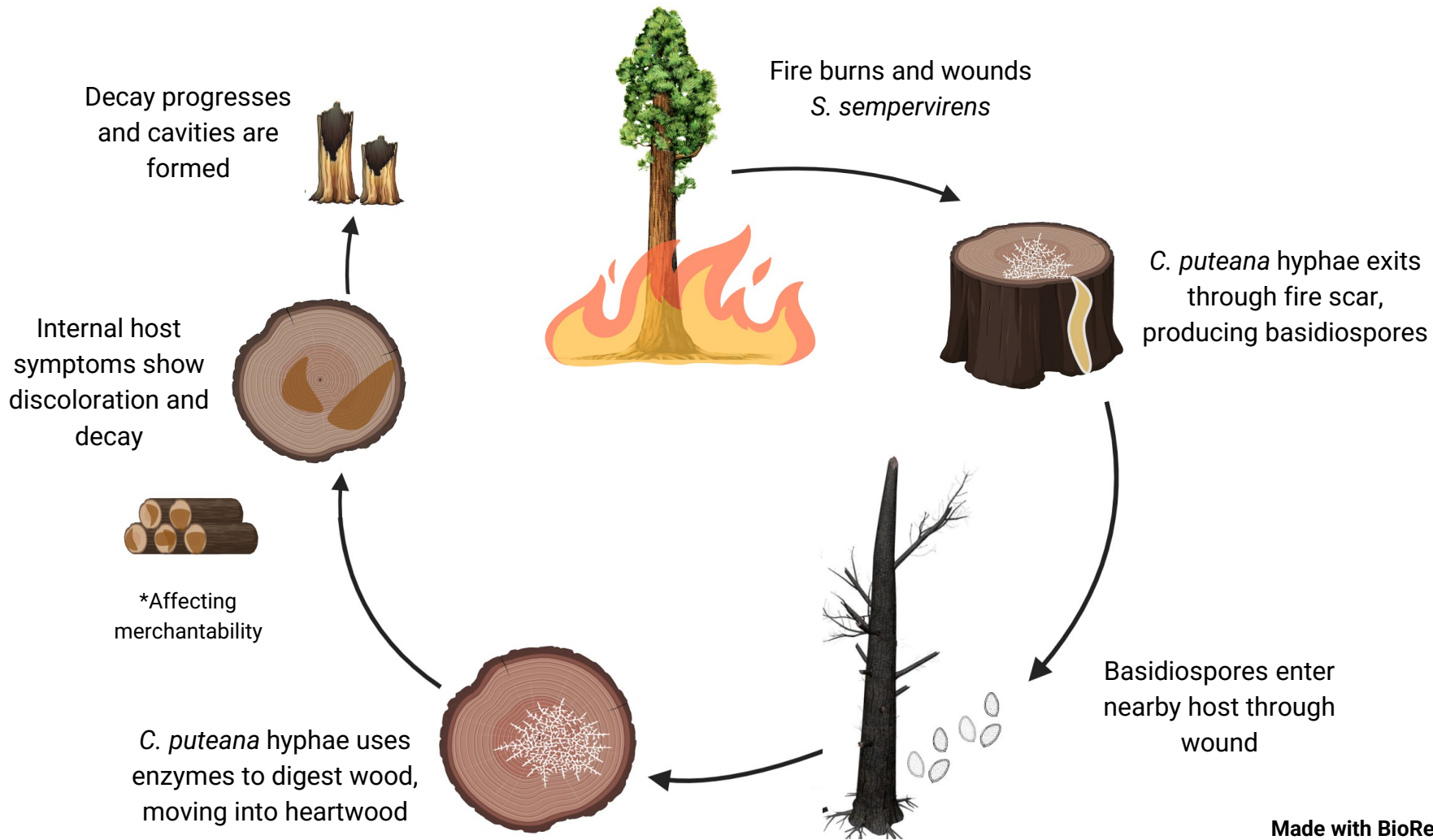


June 2023



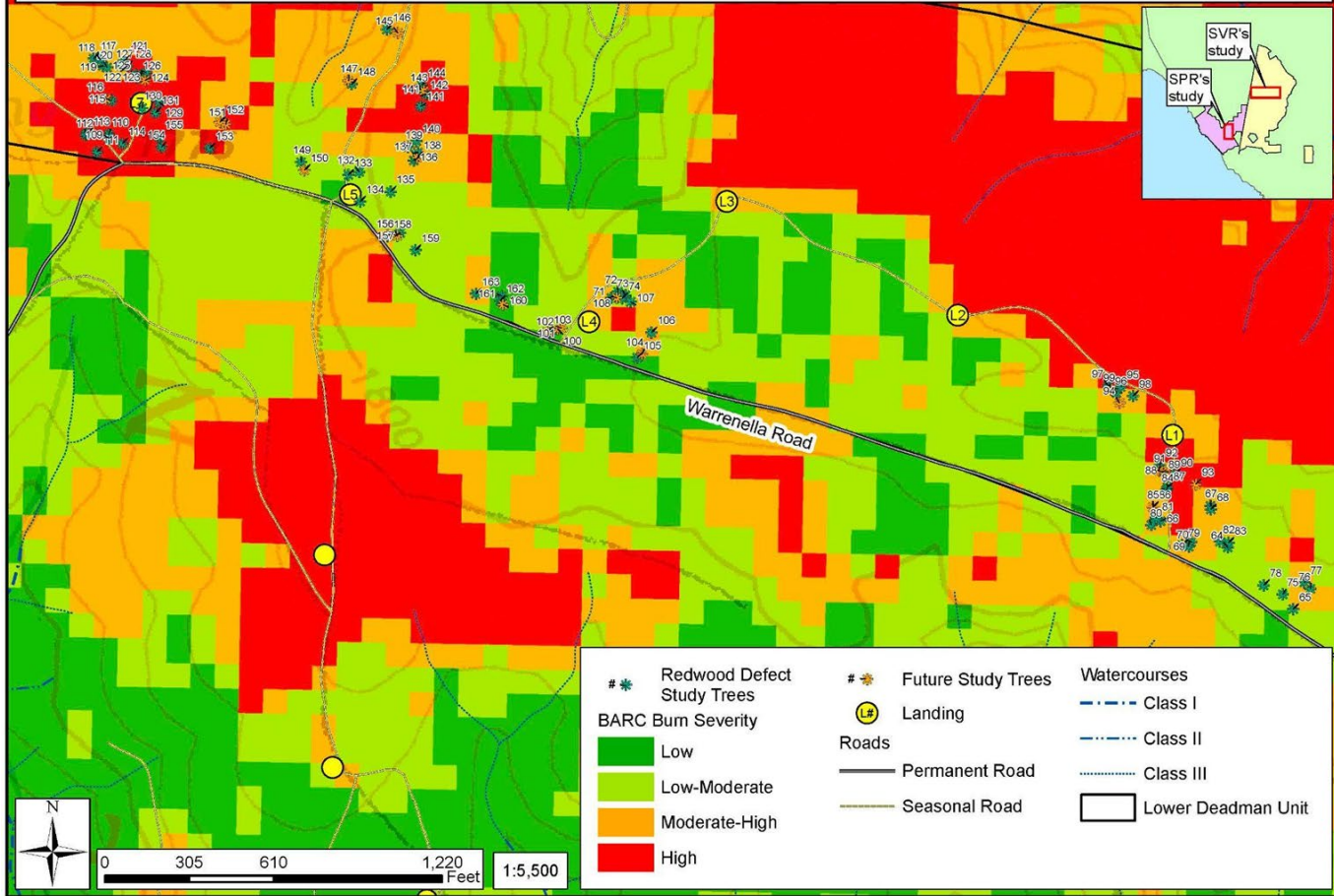
July 2023





San Vicente Redwoods (SVR) - Lower Deadman Post-Fire Redwood Defect and Merchantability Study

T9S & T10S, R3W, San Vicente Rancho, MDB&M, Santa Cruz County, Davenport USGS 7.5' Quadrangle

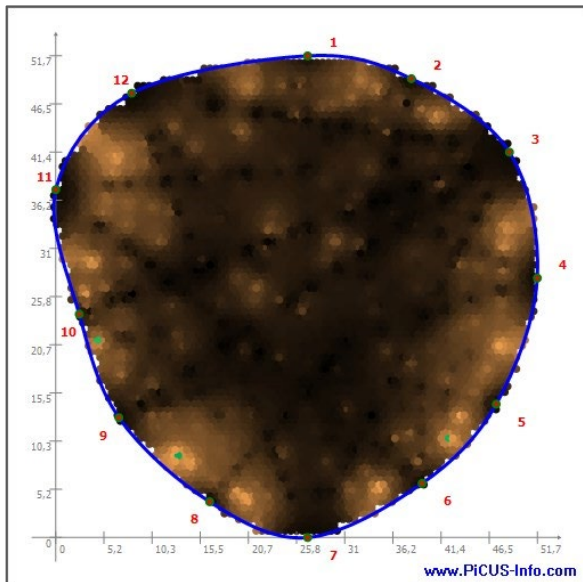


Sonic tomography

- Noninvasive technology, PiCUS 3 Sonic Tomograph
- Structural integrity at 1m from base
- 12 nails equally spaced
- Measures velocity of sound
- Sound travels faster in solid wood

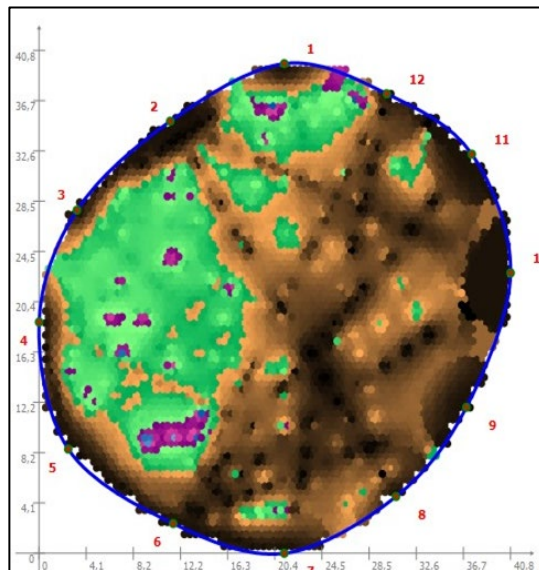


Healthy



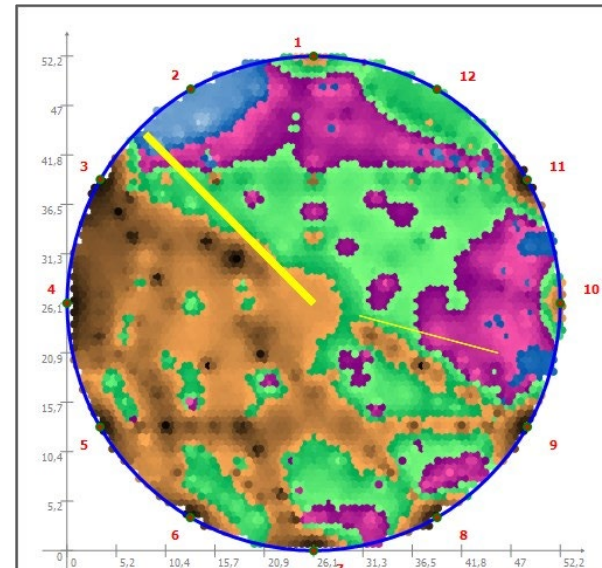
Decay: 1 %
Severe decay: 0.6 %

Moderate



Decay: 34 %
Severe decay: 4 %

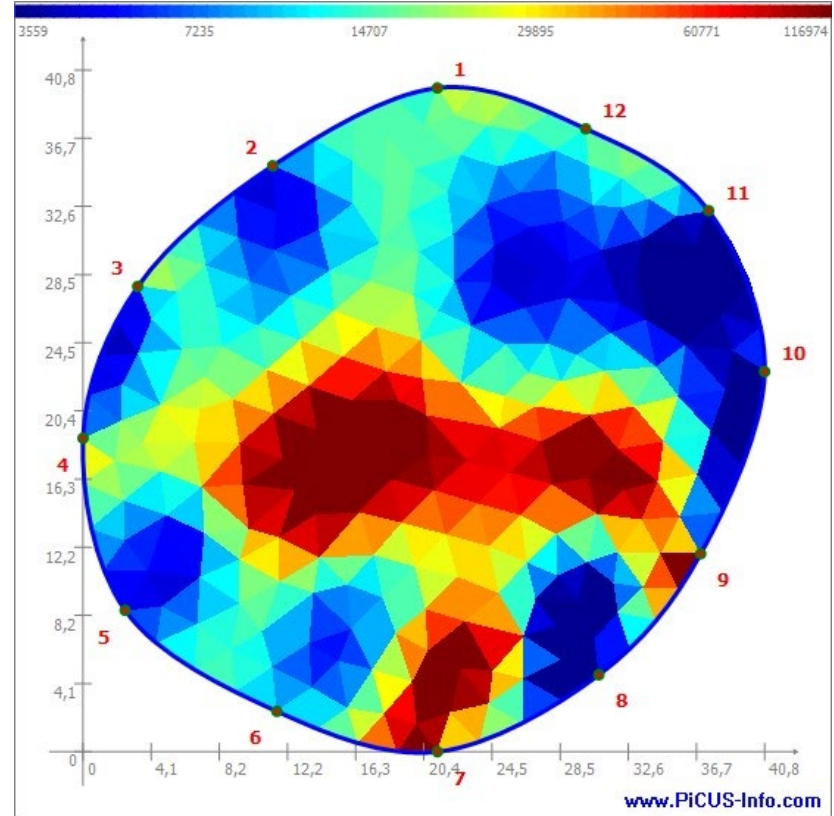
Severe



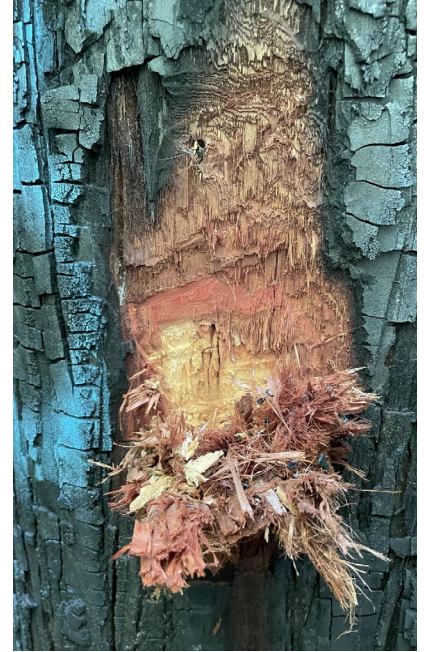
Decay: 61 %
Severe decay: 25%

Electrical impedance

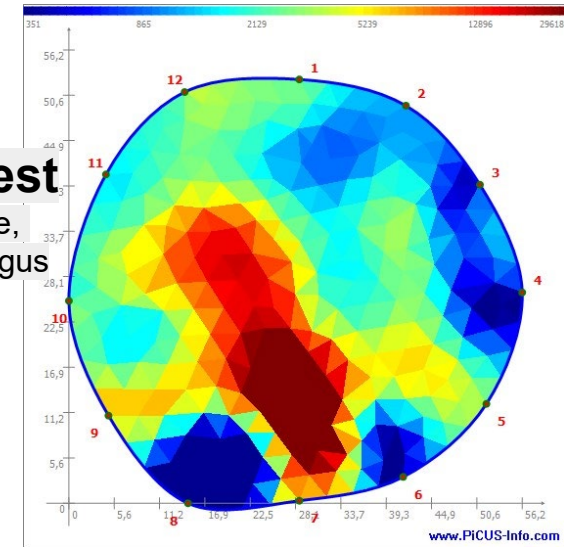
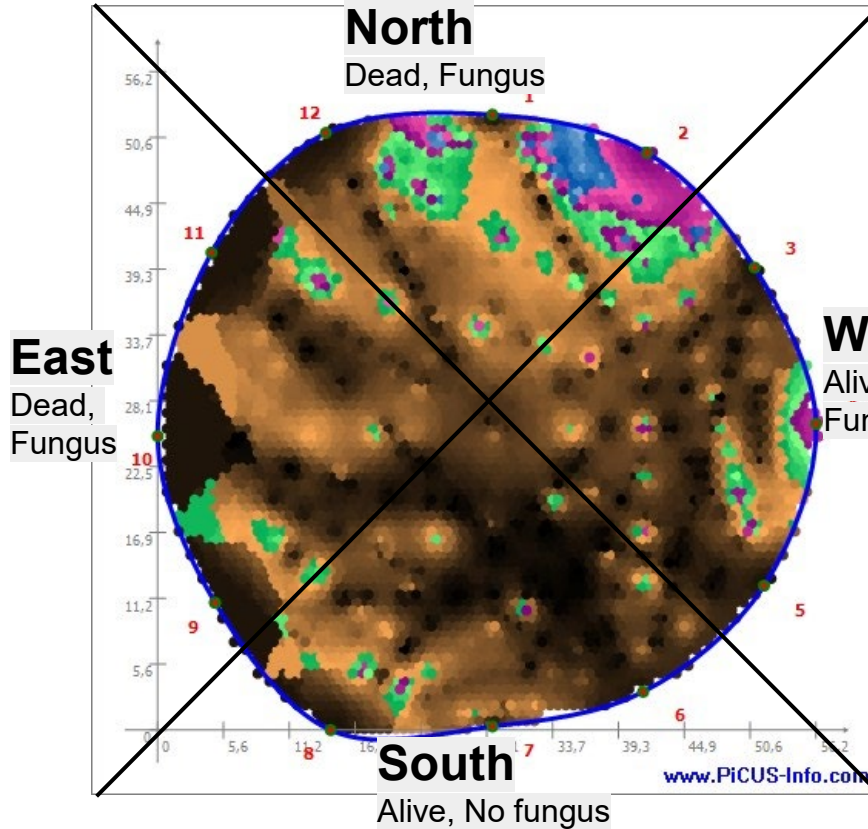
- Noninvasive technology, PiCUS tree-tronic
- Water content
- Attach 'alligator clips' to send 6 amps of voltage sent nail to nail
- Develop electrical conductivity 'map'



Visual data collection

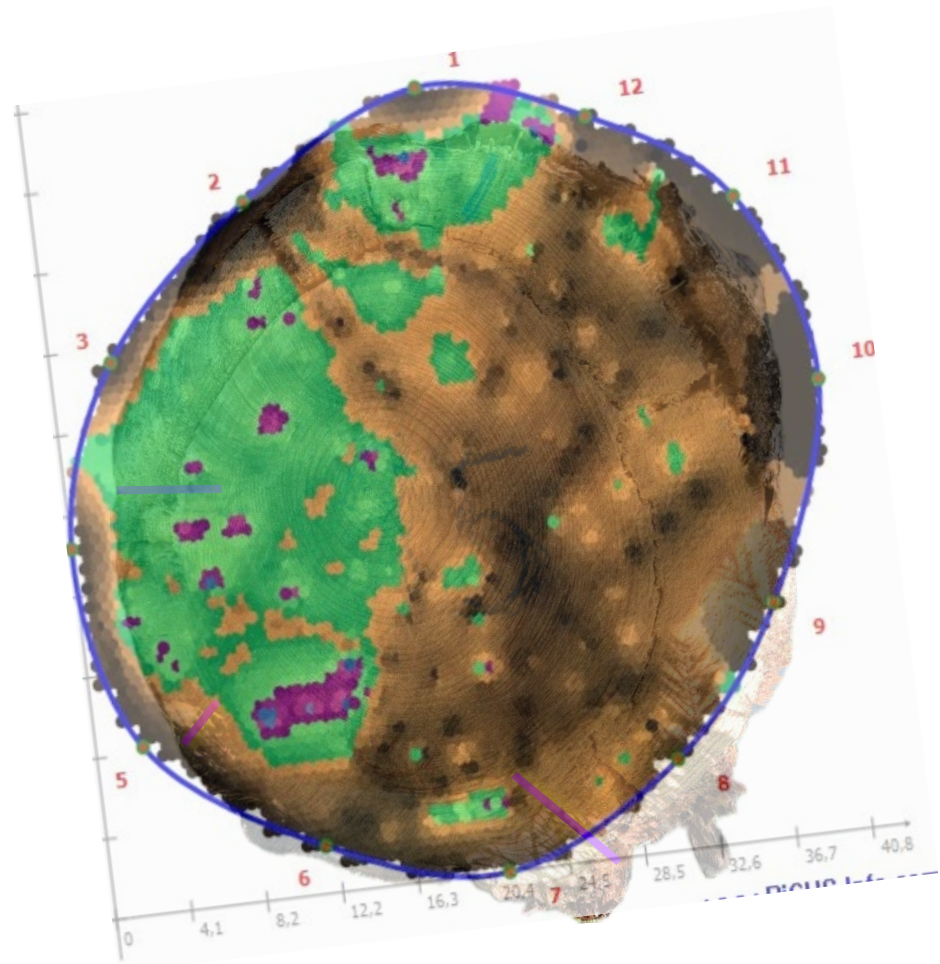


Combining methods



Logging





Next steps

- Fell 75 current study trees
- Scan 25 future study trees annually
- Compare cookies at 1m to scans
- Collect samples from felled trees at each near base and throughout the tree
- Culture *C. puteana* and other fungi present
- Test decomposition rates



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