

**9GA22700
HAMEY WOODS
SANTA CRUZ MOUNTAINS POST-FIRE REDWOOD DEFECT STUDY**

Date: December 30, 2023

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Project Status and Progress Report:

Approximately 74 study trees in the Lower Decuman Harvest Unit at San Vicente Redwoods were harvested through the Lower Decuman Emergency Order #1-23 M-00085-CR and tracked through the scaling process to the extent feasible. The winter rain forced a temporary suspension of operations, preventing the shipment of all logs to the sawmill. The remaining logs, including a portion of the stud logs, will likely be shipped in the spring when the roads are suitable for transport.

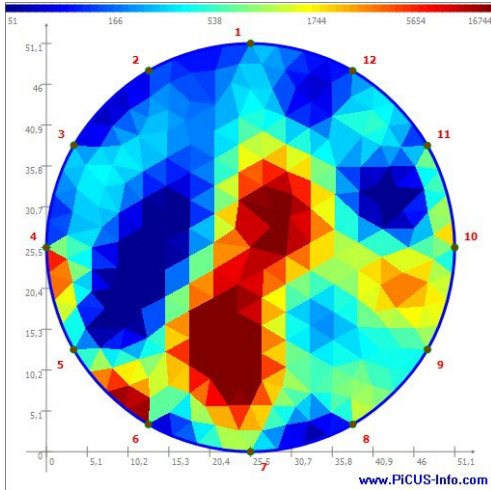
Compared to the study at Swanton Pacific Ranch, our tree tracking efforts proved more successful. We were able to track all of the logs in the field and managed to track approximately 70% of the study trees back to their corresponding scaling data at the sawmill. We collected photos and scanned individual logs in the woods and at the mill. Photos of the tree cross-sections allow for interpretation of the defects introduced by the 2020 fire.

Prior to harvesting, each tree was assessed using Sonotomography to make a computerized depiction of structural decay versus healthy wood; and Impedance tomography which reflects moisture content to indicate wetter and drier regions in the study trees at breast height. They were backed to the forest base to be calculated the same heights tomorrow and the cambium checks. We are working on uploading and presenting the post-fire effects, decay, tomography scans, and volume data for each tree.

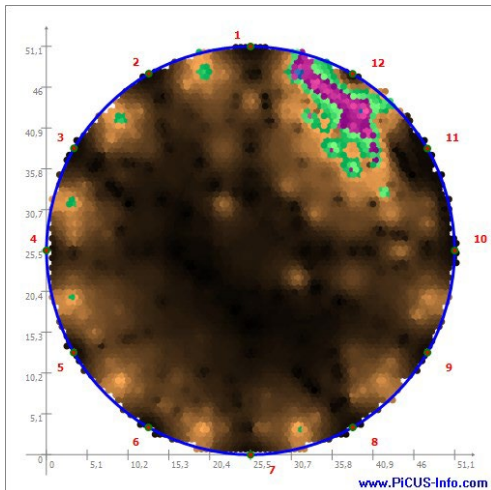
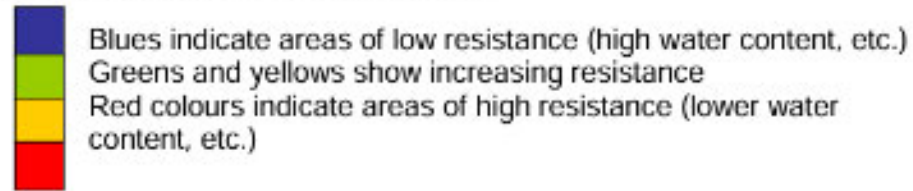
Attached: Post-fire Effects, Tomography Scans, and Log Scaling of San Vicente Redwood Trees – Photo Documentation

Post-fire Effects, Tomography Scans, and Log Scaling of
San Vicente Redwood Trees -- Photo Documentation
DRAFT

How to Read Tomography Scans



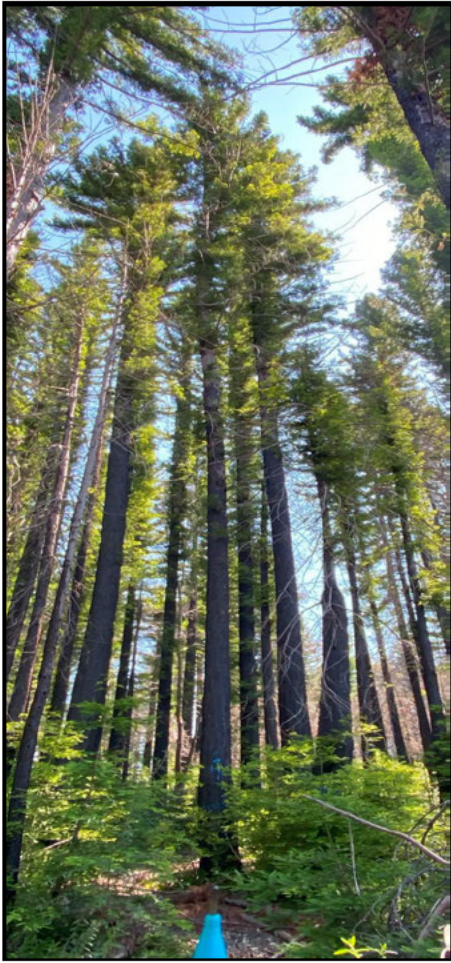
Electrical Impedance Tomography:



Sonic Tomography:



Tree #64

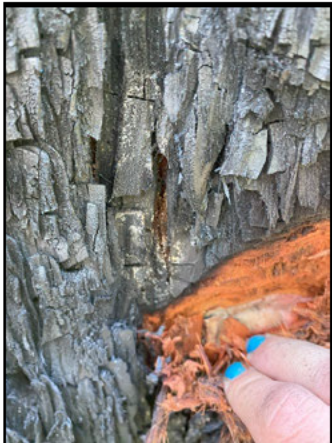


Full Tree and Fungus Photos

- ~64 sq. in of white rot
- ¼ quadrants of fungus
- ¼ quadrants of dead cambium
- Branch & Bole Sprouting
- Low-Moderate Burn Severity Zone



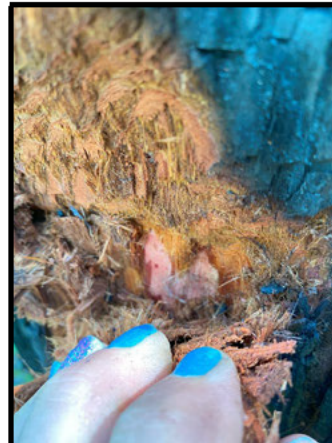
Cambium Checks at North, East, South, and West Quadrants



Alive/Fungus



Dead/No Fungus

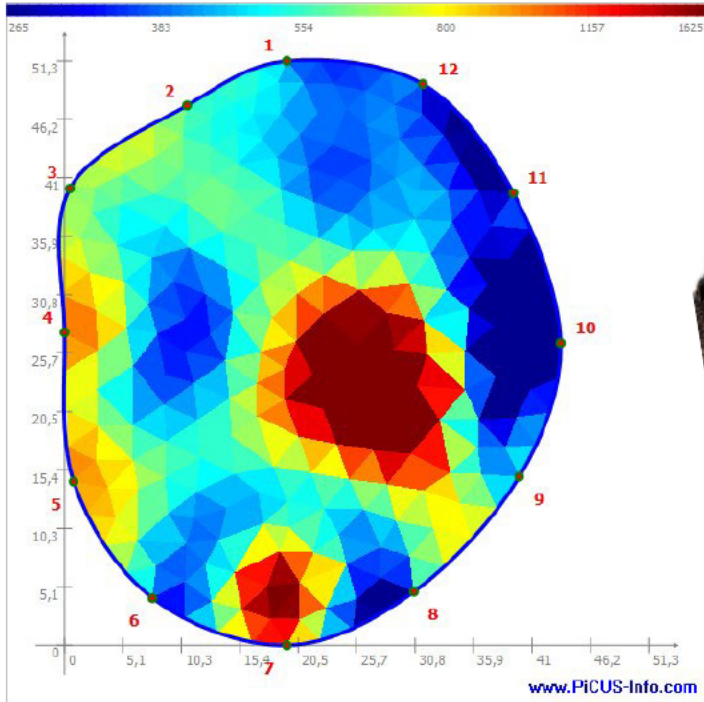


Alive/No Fungus



Alive/No Fungus

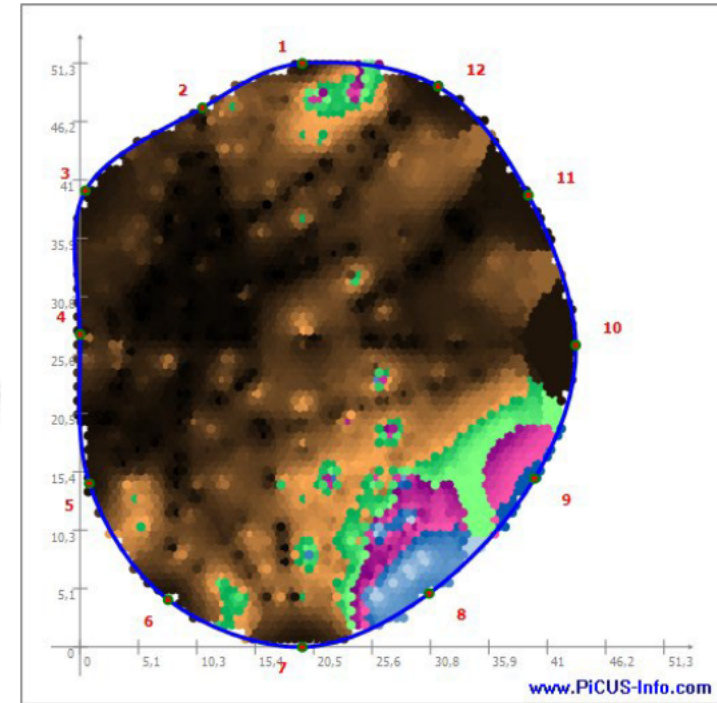
Electrical Impedance Tomography Scan



Tree #64



Sonic Tomography Scan



Log #1- Big End:

I = North [] = Sapwood rot



Log #1 Small End/ Log #2 Big End



Log #2 Small End

Log #1 Big End

- 17" Inside Bark (IB) before deductions
- 1-2" of sapwood rot around 45% circumference to the edge of heartwood
- Yellowing sapwood

Log #1 Small End/ Log #2 Big End

- 11" IB
- Healthy sapwood and heartwood

Log #2 Small End

- 9" IB
- Healthy sapwood and heartwood
- Slight mechanical damage

	Volume	Volume After Deductions
Log #1	220 bf	110 bf
Log #2	80 bf	80 bf

Tree #78

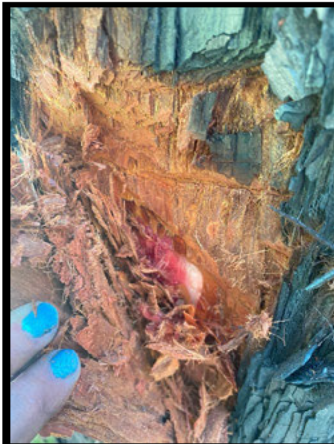


← Full Tree Photo

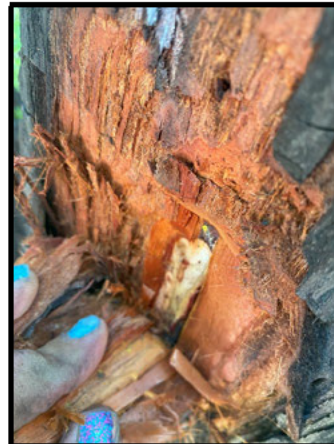
No Fungus



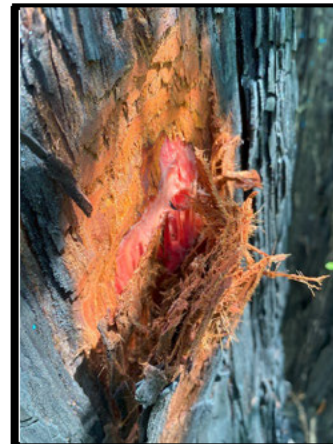
Alive/No Fungus



Alive/No Fungus



Alive/No Fungus

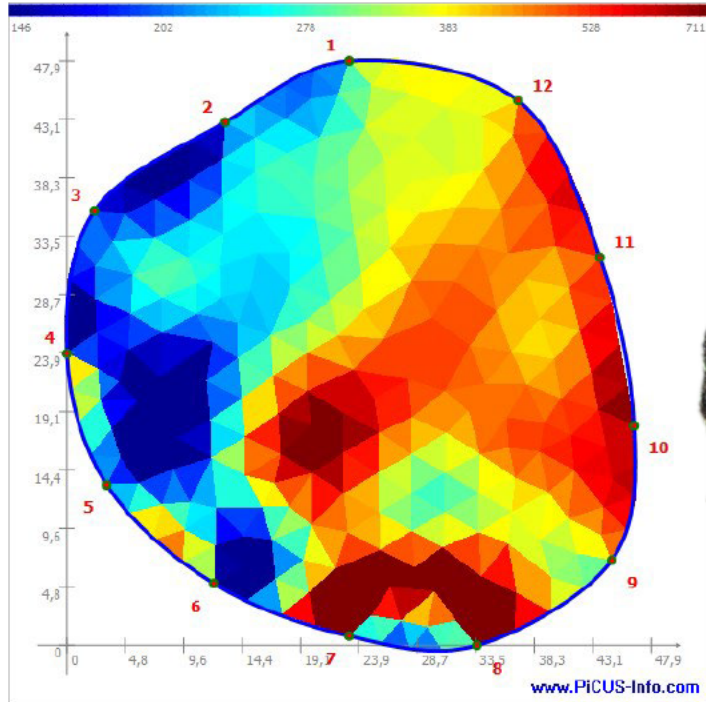


Alive/No Fungus

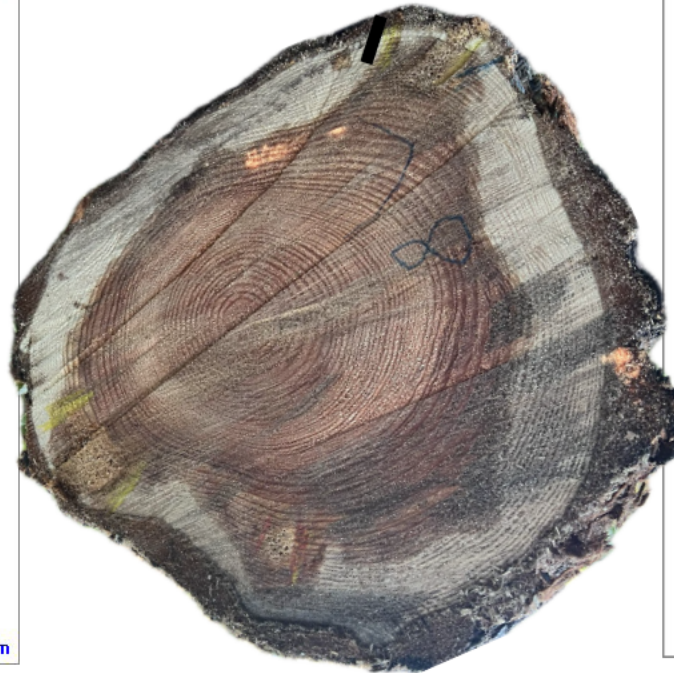
- ¼ quadrants of fungus
- ¼ quadrants of dead cambium
- Bole Sprouting
- Moderate-High Burn Severity Zone
- Dead top

← Cambium Checks at North, East, South, and West Quadrants

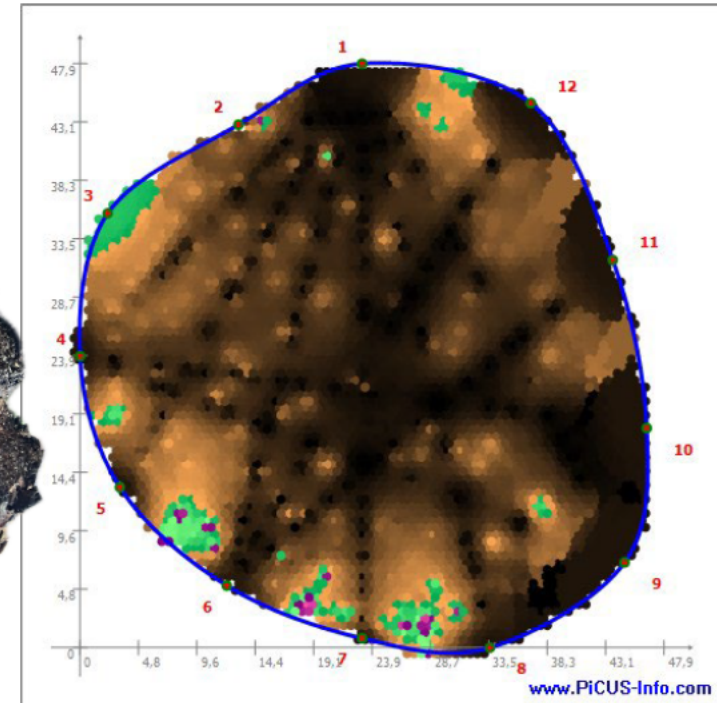
Electrical Impedance Tomography Scan



Tree #78



Sonic Tomography Scan



Log #1 Big End

I = North [] = Sapwood rot



Log #1 Small End/ Log #2 Big End



Log #2 Small End

Log #1 Big End

- 18" Inside Bark (IB) before deductions
- 1.5-2.25" of sapwood rot around 10% circumference to the edge of heartwood
- Yellowing sapwood

Log #1 Small End/ Log #2 Big End

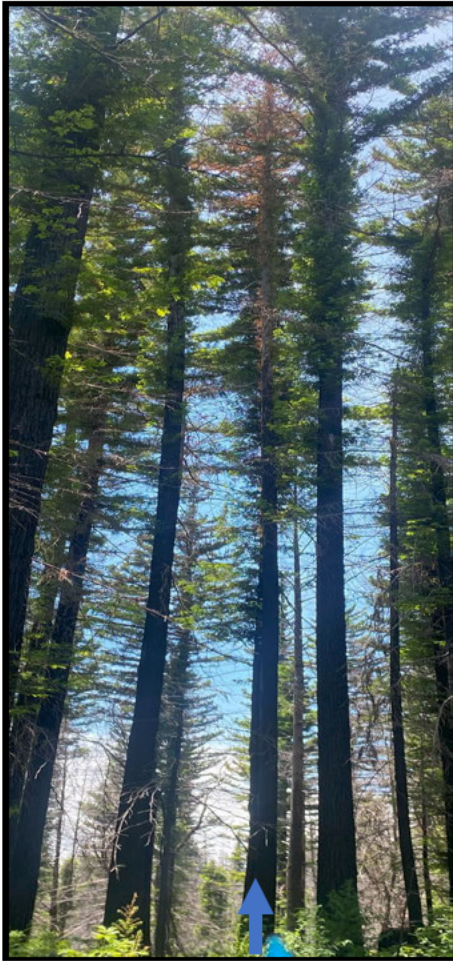
- 11" IB
- Healthy sapwood and heartwood

Log #2 Small End

- 7" IB
- Healthy sapwood and heartwood

	Volume	Volume After Deductions
Log #1	260 bf	220 bf
Log #2	50 bf	50 bf

Tree #81

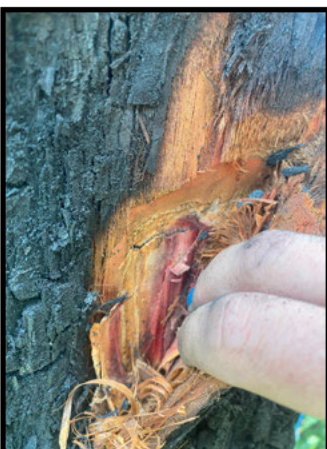


Full Tree and Fungus Photos

- ~890 sq. in of white rot
- $\frac{3}{4}$ quadrants of fungus
- $\frac{4}{4}$ quadrants of dead cambium
- Tree was dying at time of measurement and was dead at the time of cutting
- Branch & Bole Sprouting (Branch sprouts dead at time of measurement)
- Moderate-High Burn Severity Zone



Cambium Checks at North, East, South, and West Quadrants



Dead/Fungus



Dead/Fungus

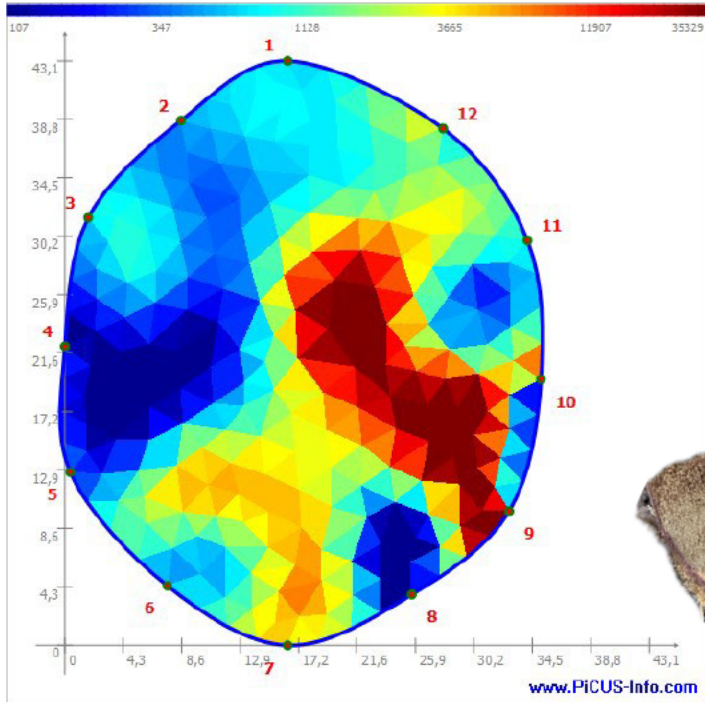


Dead/Fungus



Dead/No Fungus

Electrical Impedance Tomography Scan

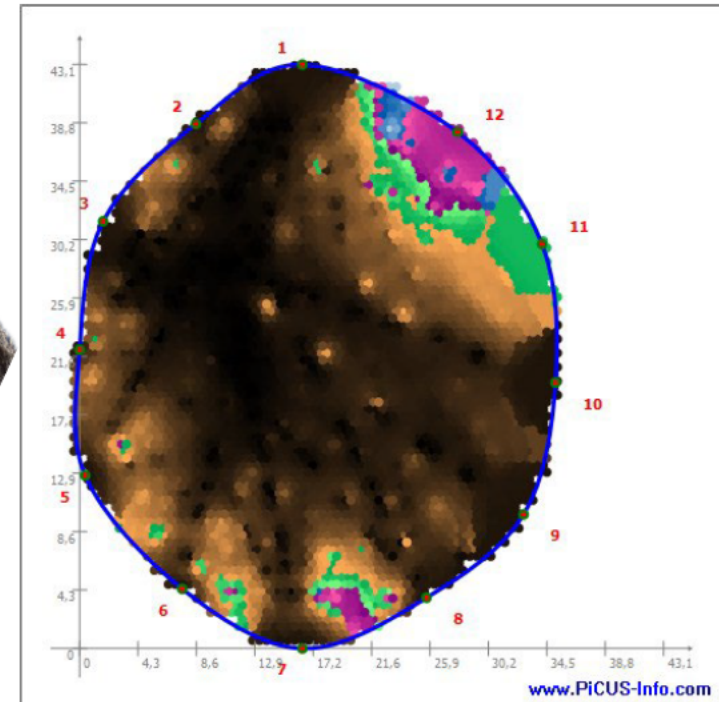


Tree #81



Log #1 Big End

Sonic Tomography Scan



| = North [] = Sapwood rot



Log #1 Small End/ Log #2 Big End



Log #2 Small End

Log #1 Big End

- 15" Inside Bark (IB) before deductions
- 1.75-2" of sapwood rot around 90% circumference to the edge of heartwood
- Yellowing sapwood

Log #1 Small End/ Log #2 Big End

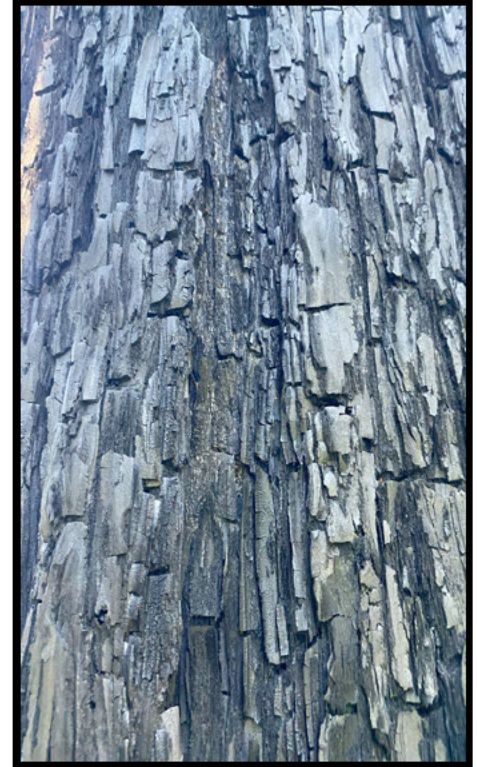
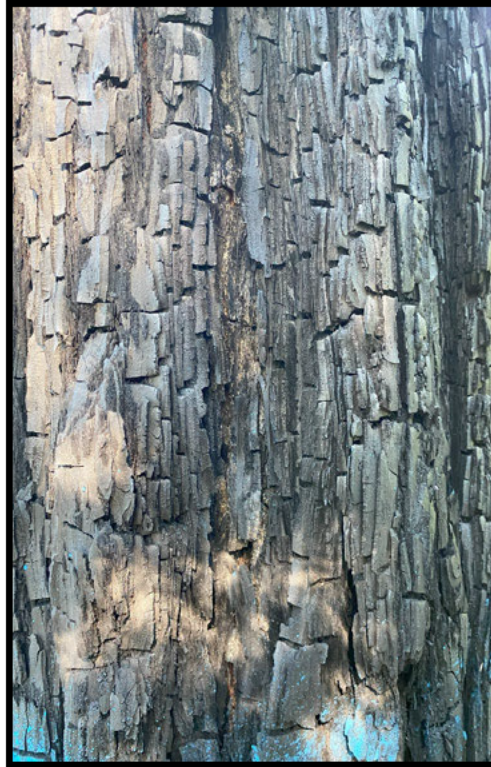
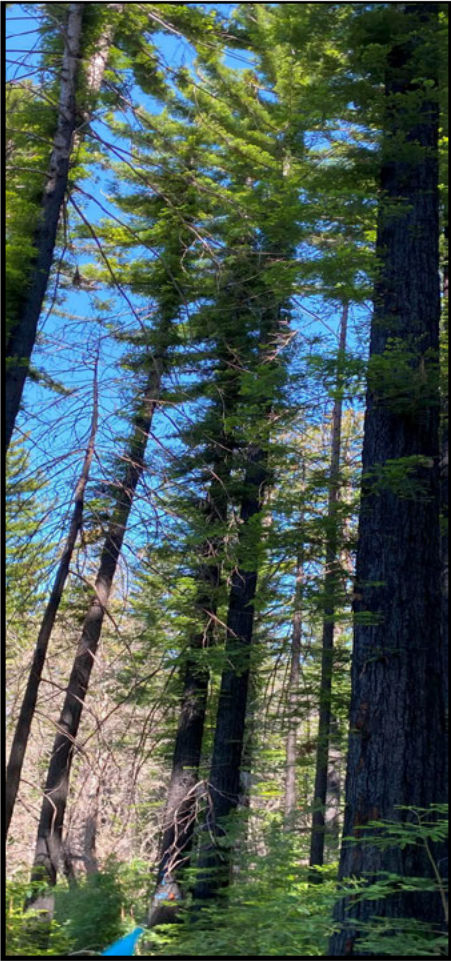
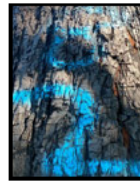
- 9" IB
- Healthy sapwood and heartwood

Log #2 Small End

- 6" IB
- Healthy sapwood and heartwood
- Yellowing sapwood
- Knot present

	Volume	Volume After Deductions
Log #1	150 bf	120 bf
Log #2	50 bf	50 bf

Tree #82



Full Tree and Fungus Photos

- ~74 sq. in of white rot
- 1/4 quadrants of fungus
- 9/4 quadrants of dead cambium
- Branch & Bole Sprouting
- Low-Moderate Burn Severity Zone



Cambium Checks at North, East, South, and West Quadrants



Alive/Fungus



Alive/No Fungus

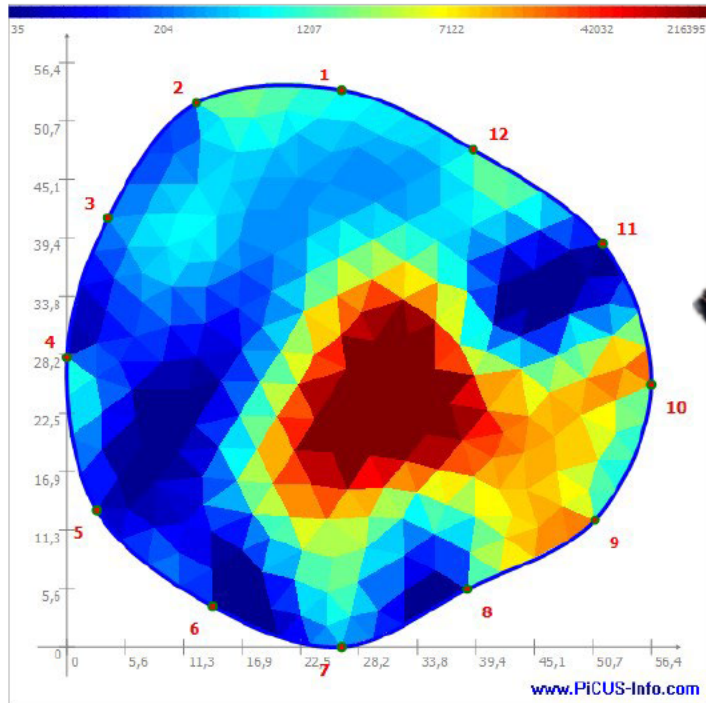


Alive/No Fungus



Alive/No Fungus

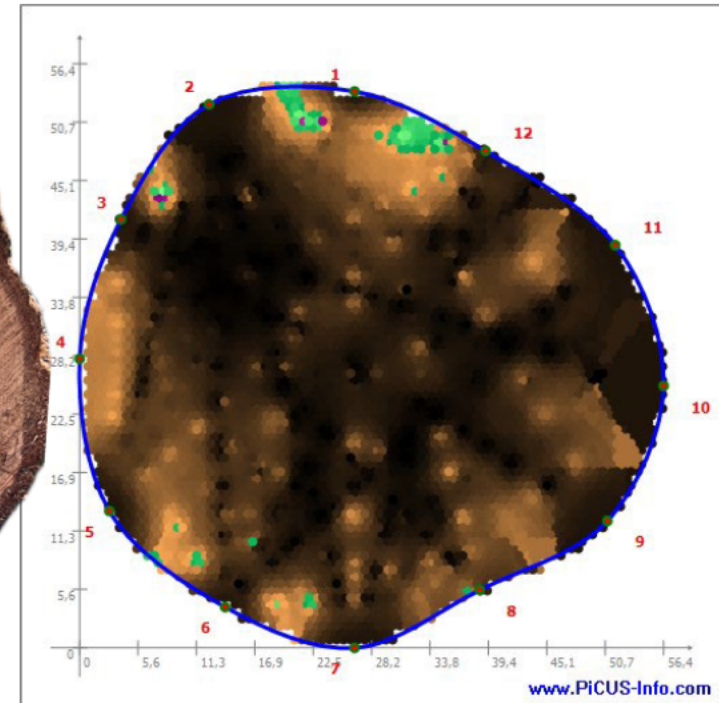
Electrical Impedance Tomography Scan



Tree #82



Sonic Tomography Scan



Log #1 Big End

| = North [] = Sapwood rot



Log #1 Small End/ Log #2 Big End



Log #2 Small End

Log #1 Big End

- 18" Inside Bark (IB) before deductions
- 1-2" of sapwood rot around 8% circumference to the edge of heartwood
- Yellowing sapwood

Log #1 Small End/ Log #2 Big End

- 12" IB
- Healthy sapwood and heartwood
- Knot present

Log #2 Small End

- 10" IB
- Healthy sapwood and heartwood

	Volume	Volume After Deductions
Log #1	280 bf	230 bf
Log #2	110 bf	110 bf