

# Sudden Oak Death on the North Coast



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# The Story of Sudden Oak Death (SOD)

- Mid 1990's: "Bleeding" and dying tanoaks and coast live oaks noted around SF Bay area
- The press dubs it "sudden oak death" (SOD)
- Early 2000s: Researchers link disease to new *Phytophthora* species



Southern Humboldt 2007

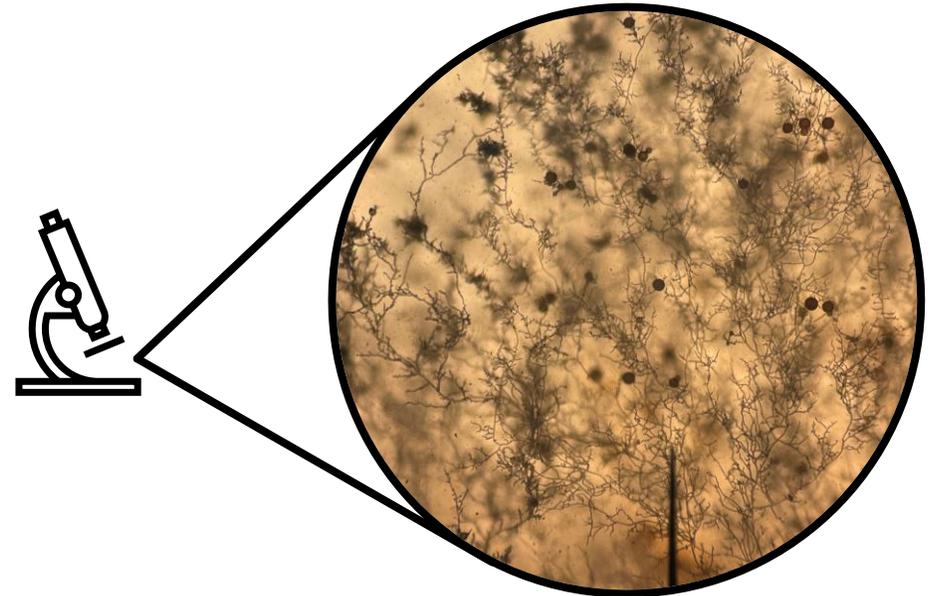
# What is *Phytophthora ramorum*?

A Brief Introduction



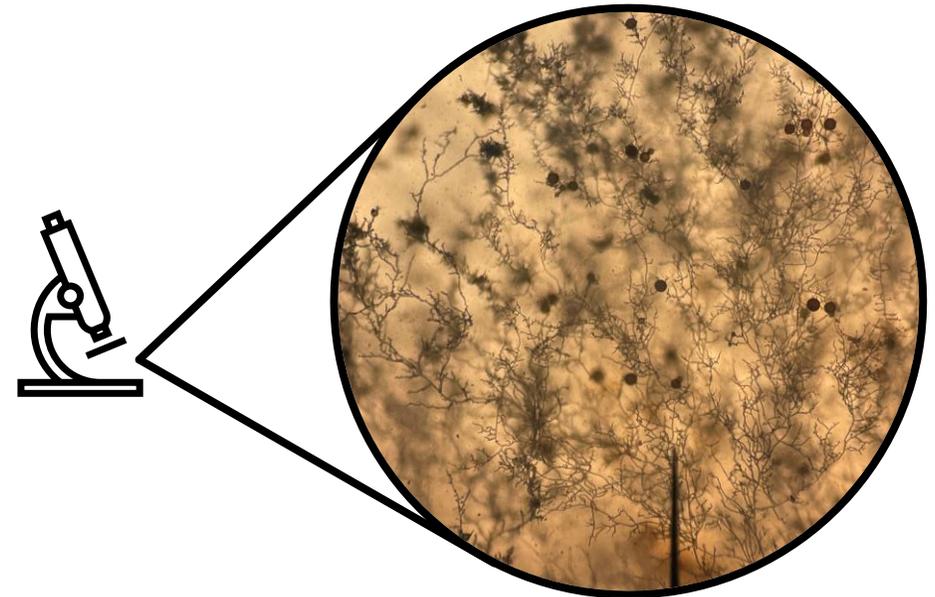
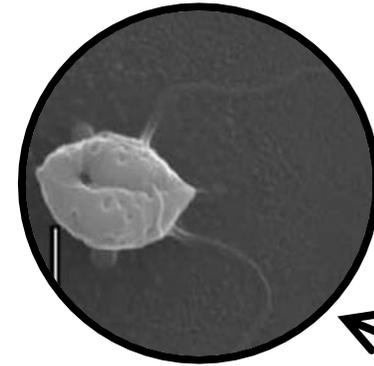
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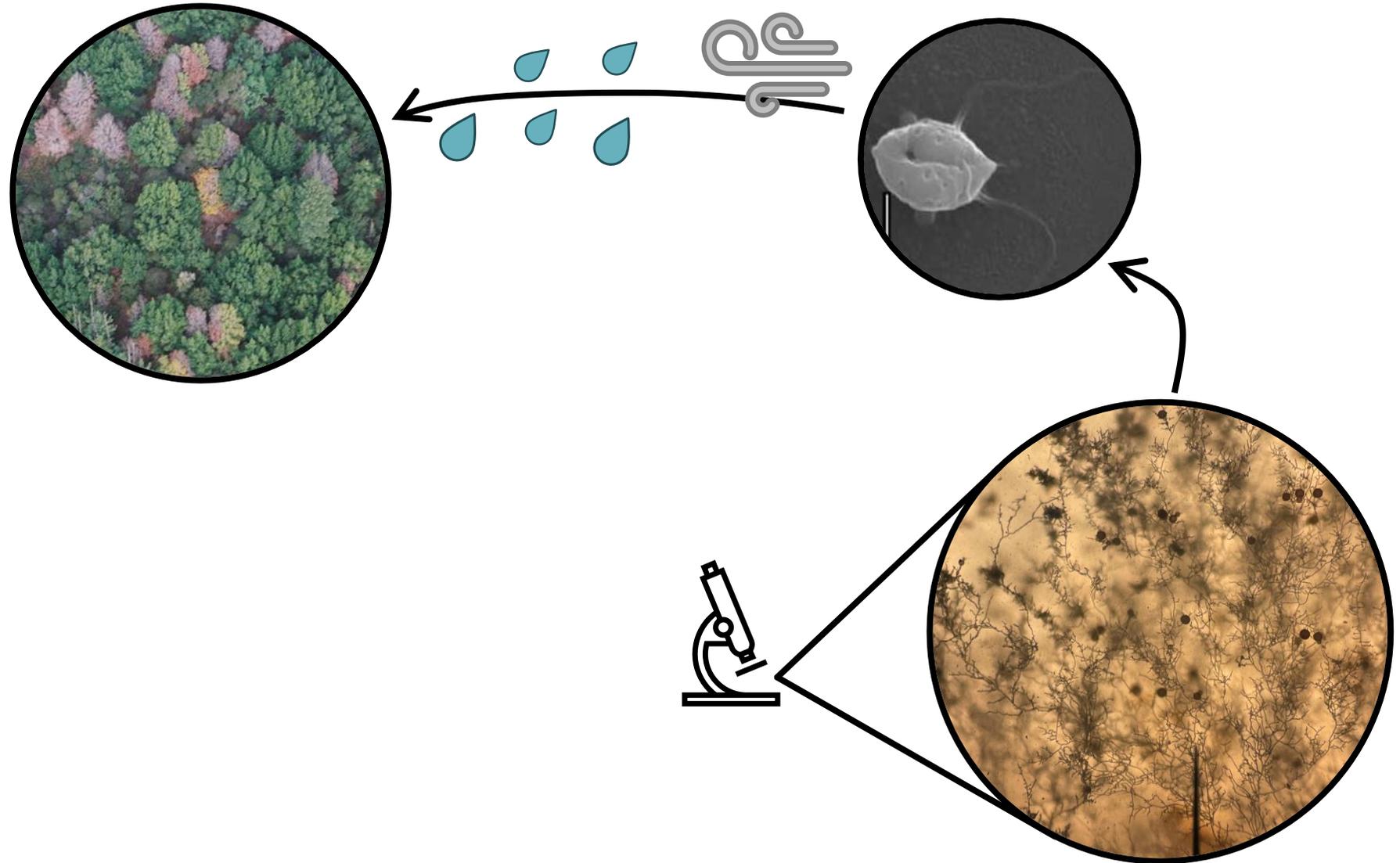
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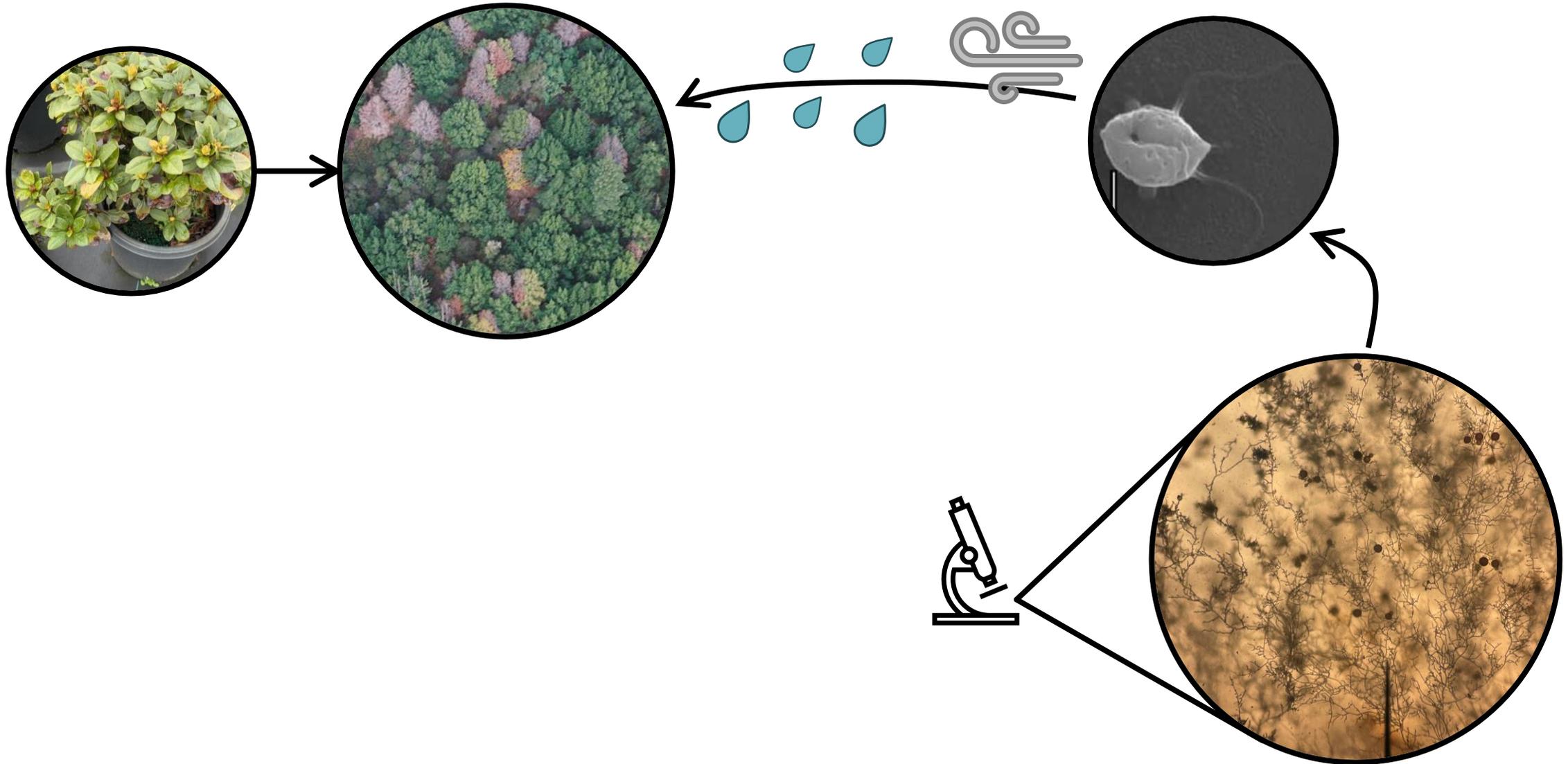
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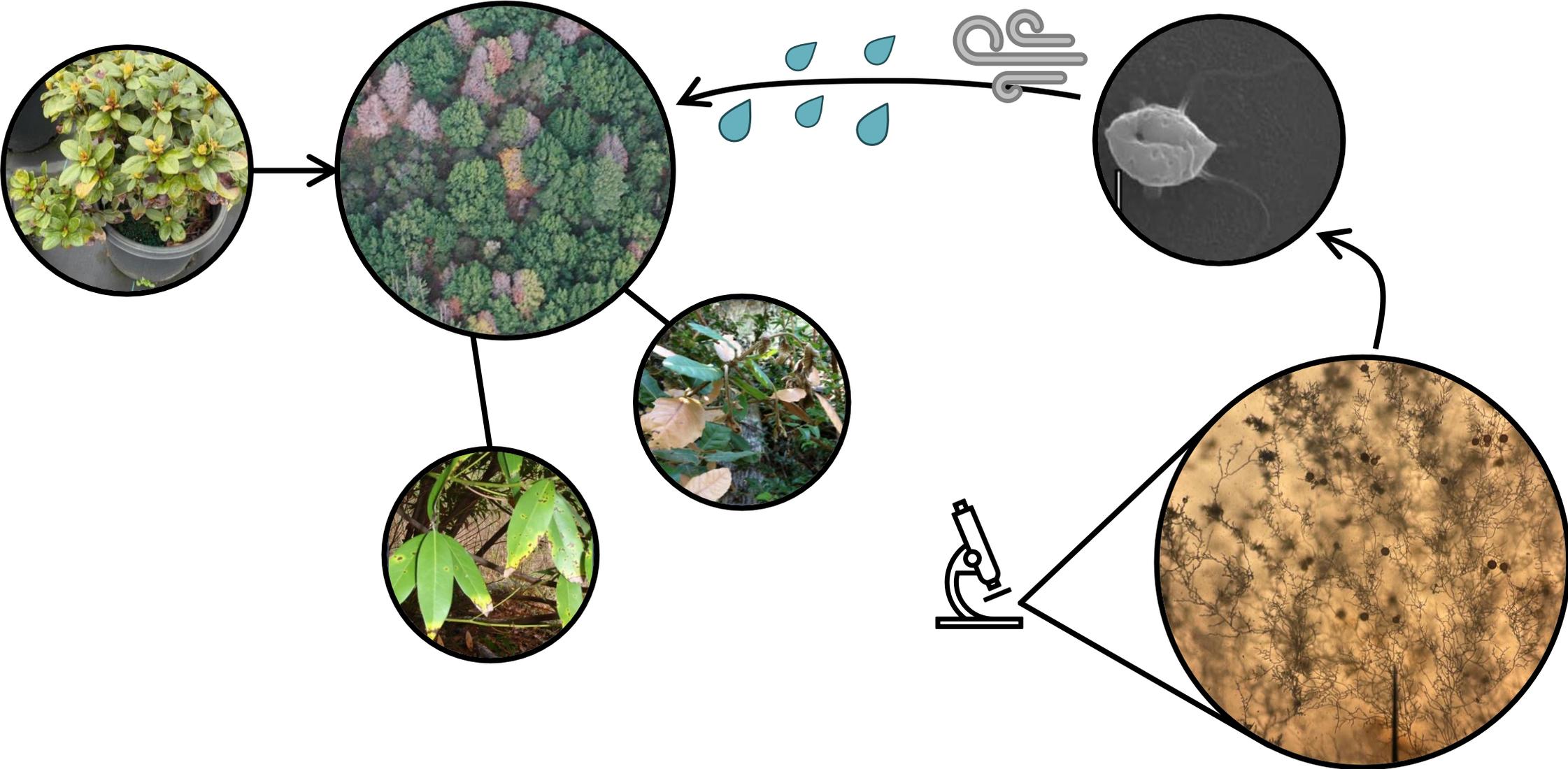
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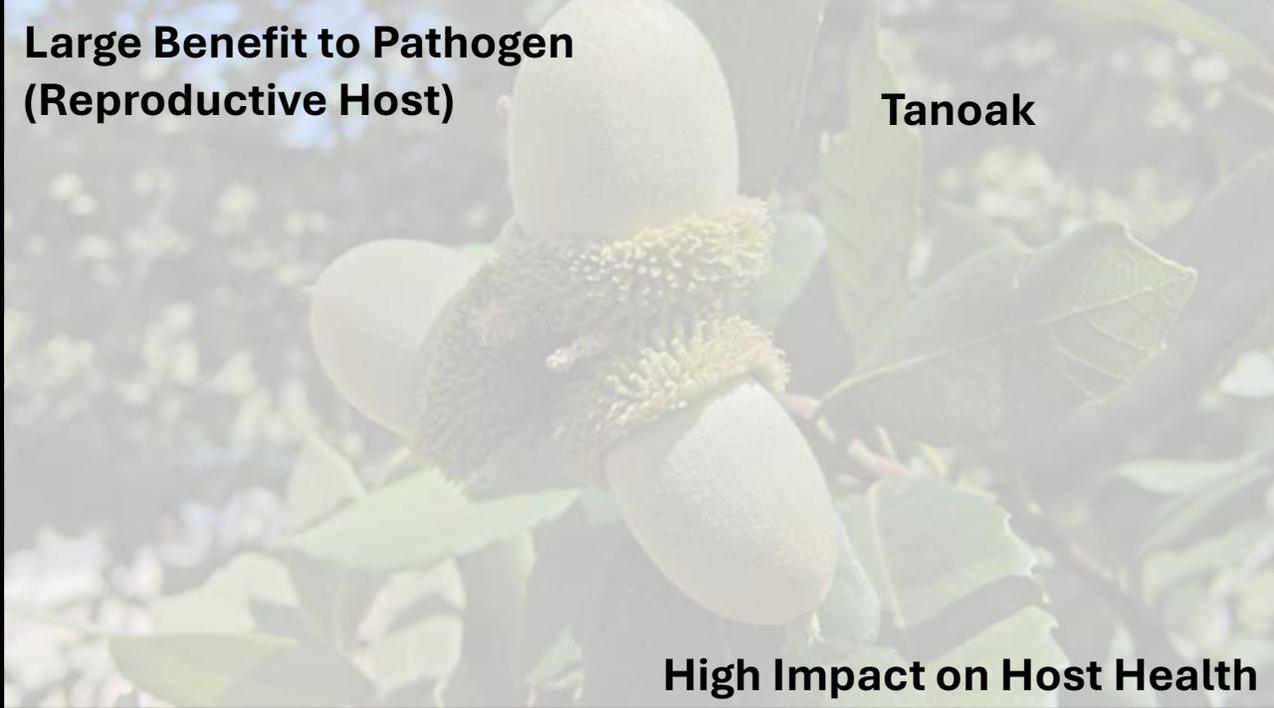




**Bay**

**Rhododendron**

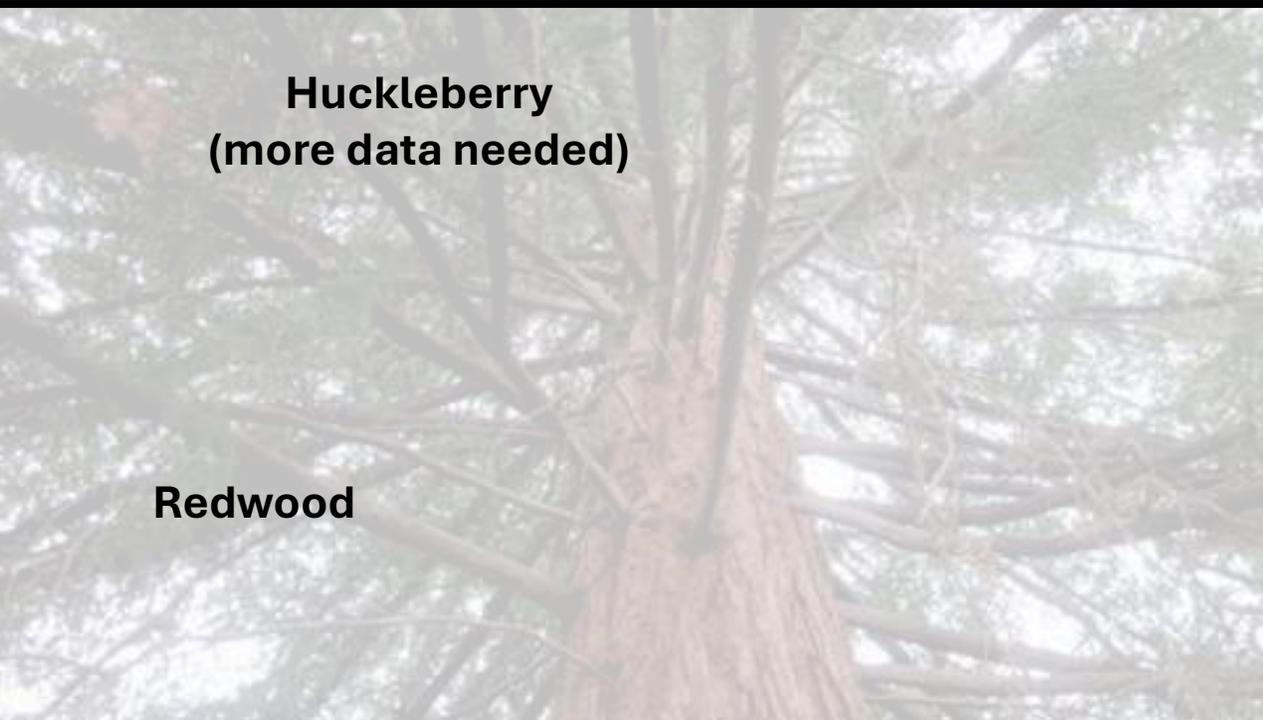
**Low Impact on Host Health**



**Large Benefit to Pathogen  
(Reproductive Host)**

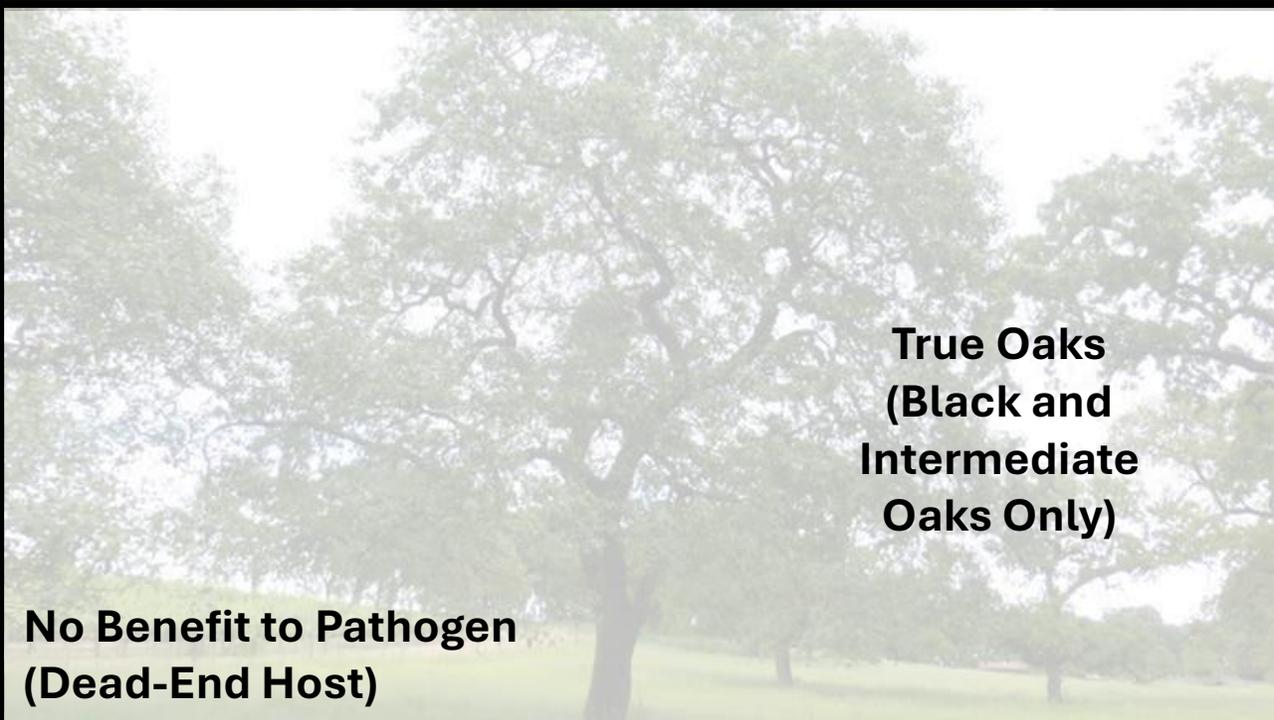
**Tanoak**

**High Impact on Host Health**



**Huckleberry  
(more data needed)**

**Redwood**



**True Oaks  
(Black and  
Intermediate  
Oaks Only)**

**No Benefit to Pathogen  
(Dead-End Host)**

# California Bay Laurel: Vector



# Symptoms on Tanoak



Dead leaves have oily or wet look to them



Branch tips curled into "shepherd's crooks"



Leaves with darkened midrib, necrosis spreading out from midrib

# Symptoms on Tanoak

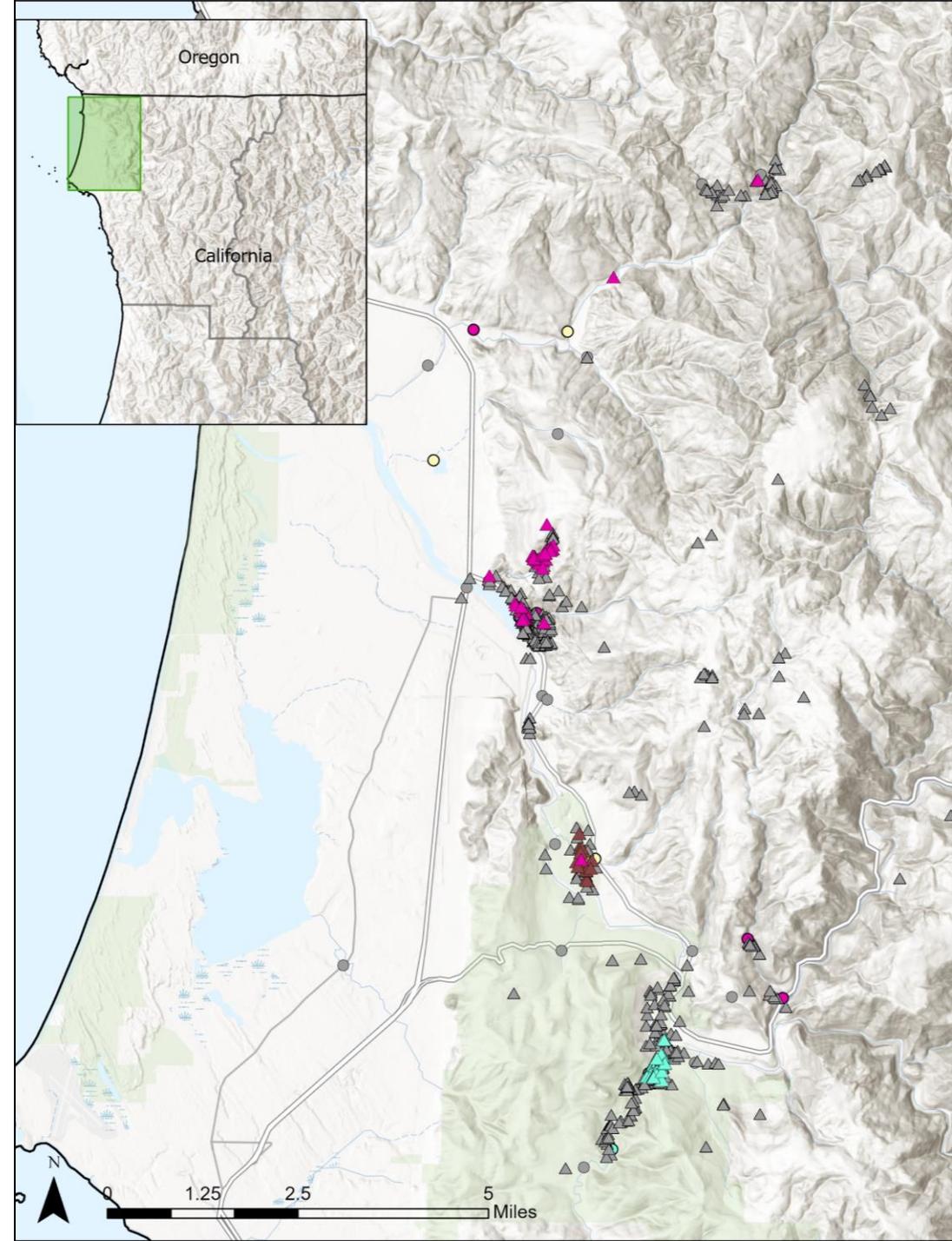


Oblong black lesions on twigs; the pathogen is growing from the edges of these lesions into the healthy tissue



Bleeding stem canker; possibly a sign of sudden oak death, but other diseases may cause this symptom

# Regional Update: Three SOD Strains in Del Norte



# Mating Types

<b>A1</b>	<b>A2</b>
EU1 (Europe and North America)	NA1 (North America)
EU2 (Europe)	NA2 (North America)

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**= Genetic Recombination Potential**

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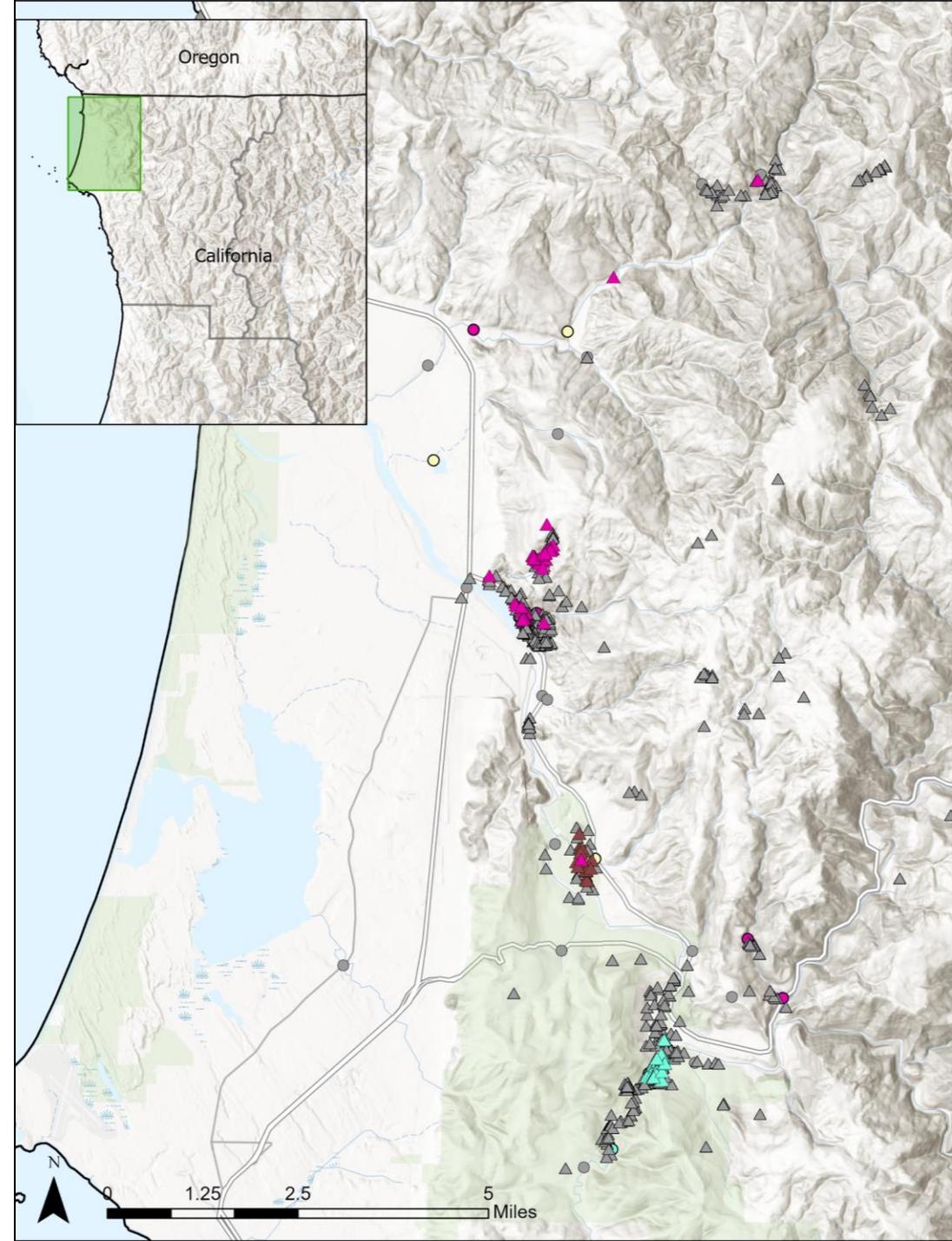
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# Three SOD Strains in Del Norte

- NA1 infestation spreads along Howland Hill Road

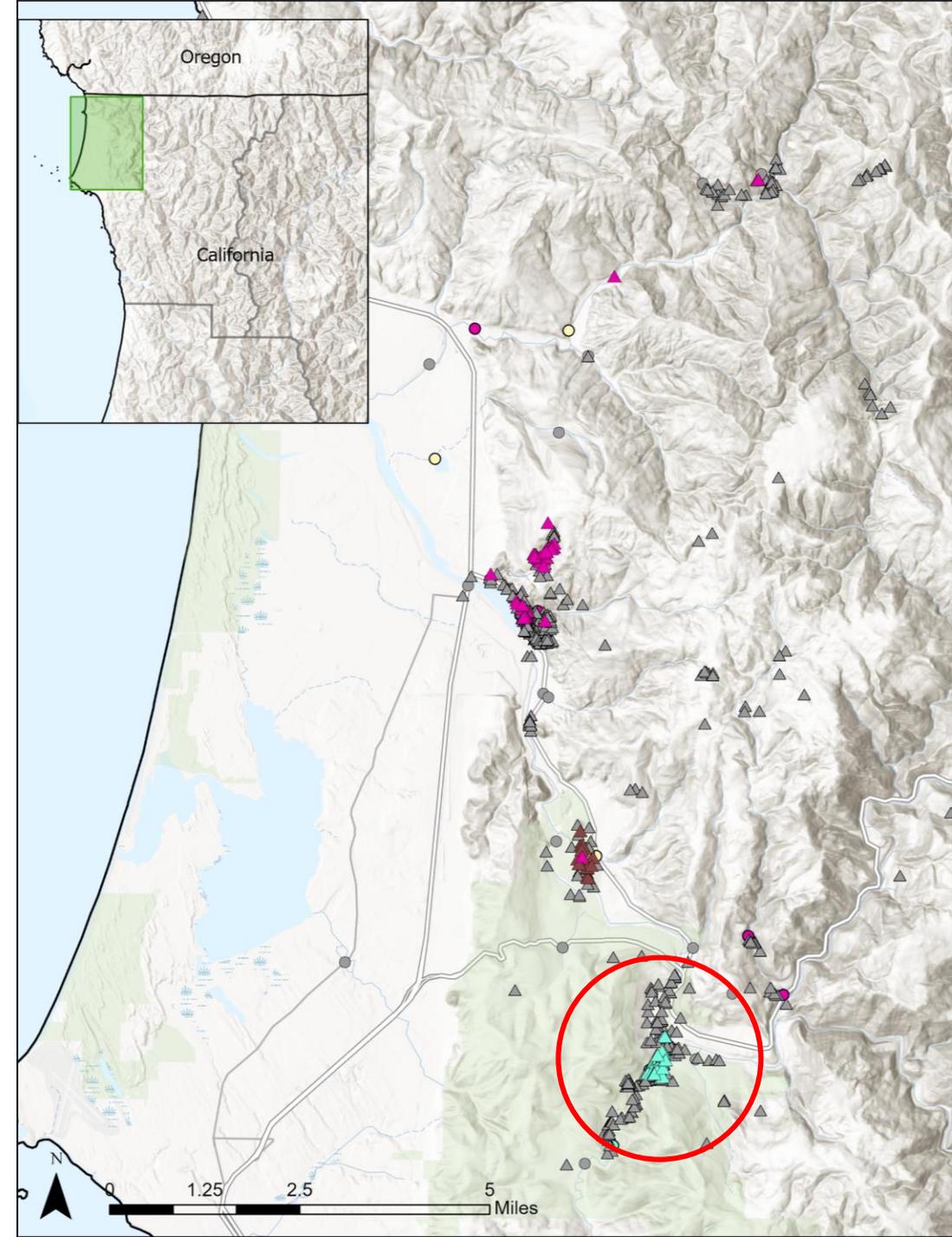
NA1 infestation now across Smith River in campground



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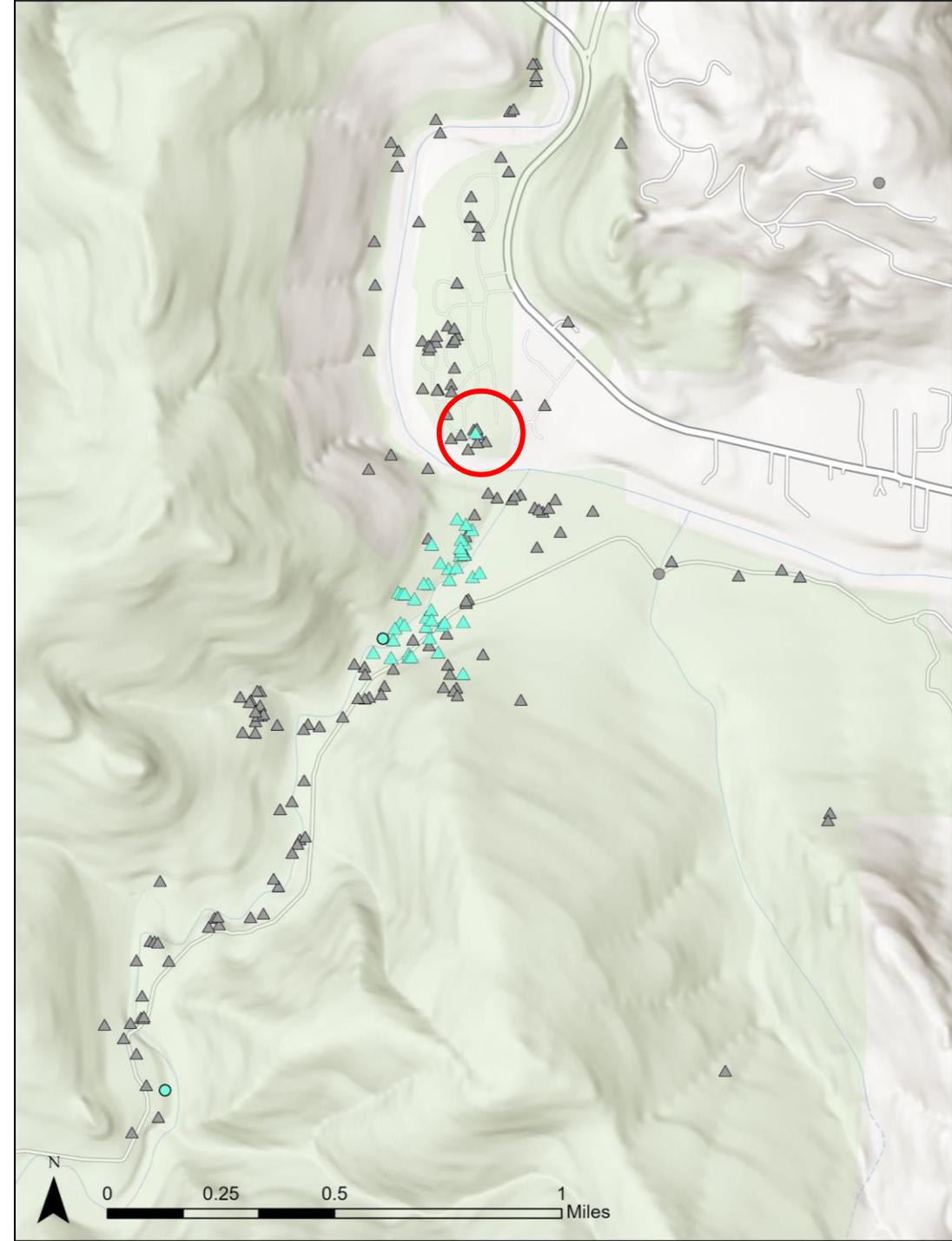
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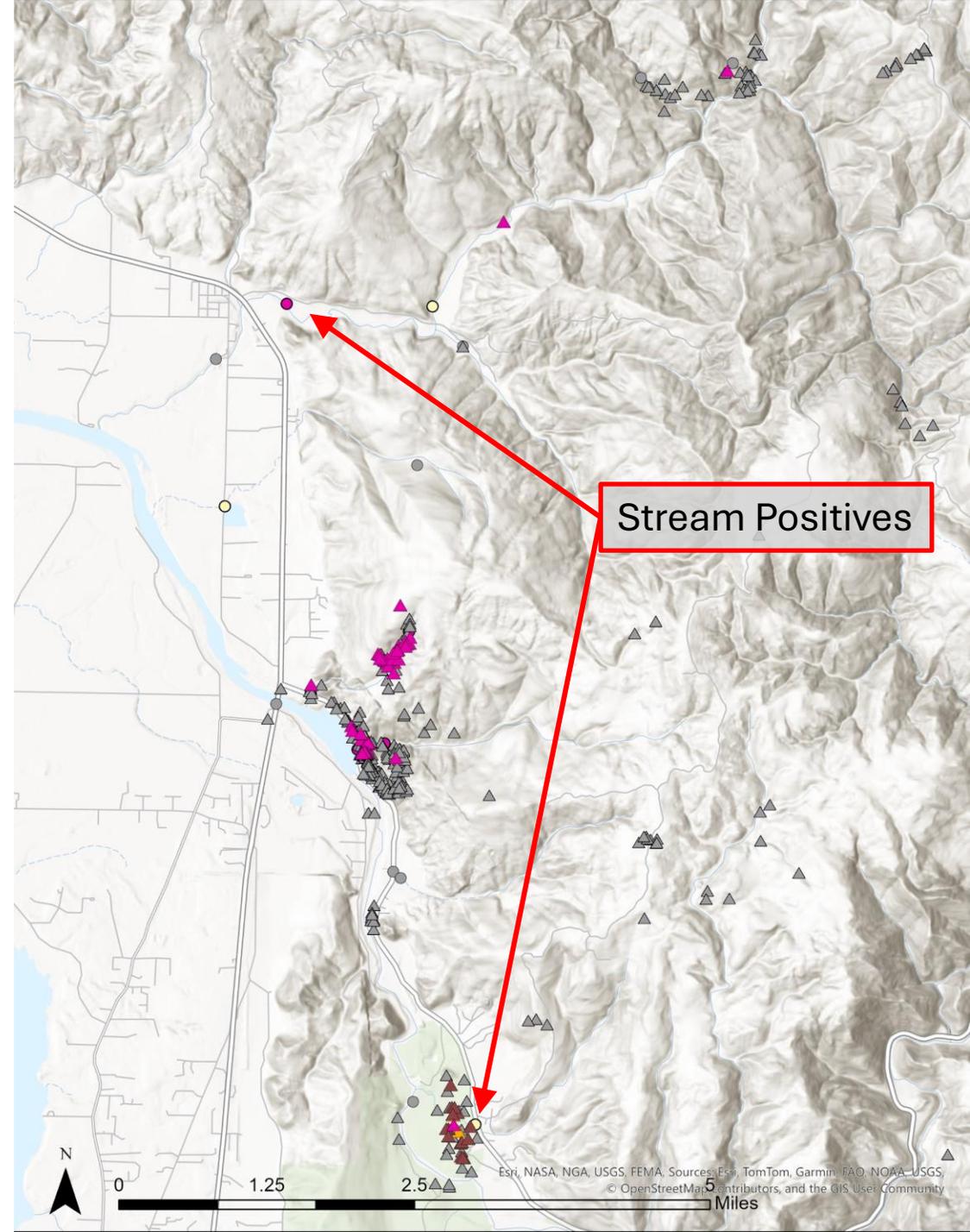
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- Rapid spread of EU1 continues

  - New detection in Peacock Creek leads to previously unknown infestation in See-tr'ee-ghin-dvm-dvn near Tanoak Drive



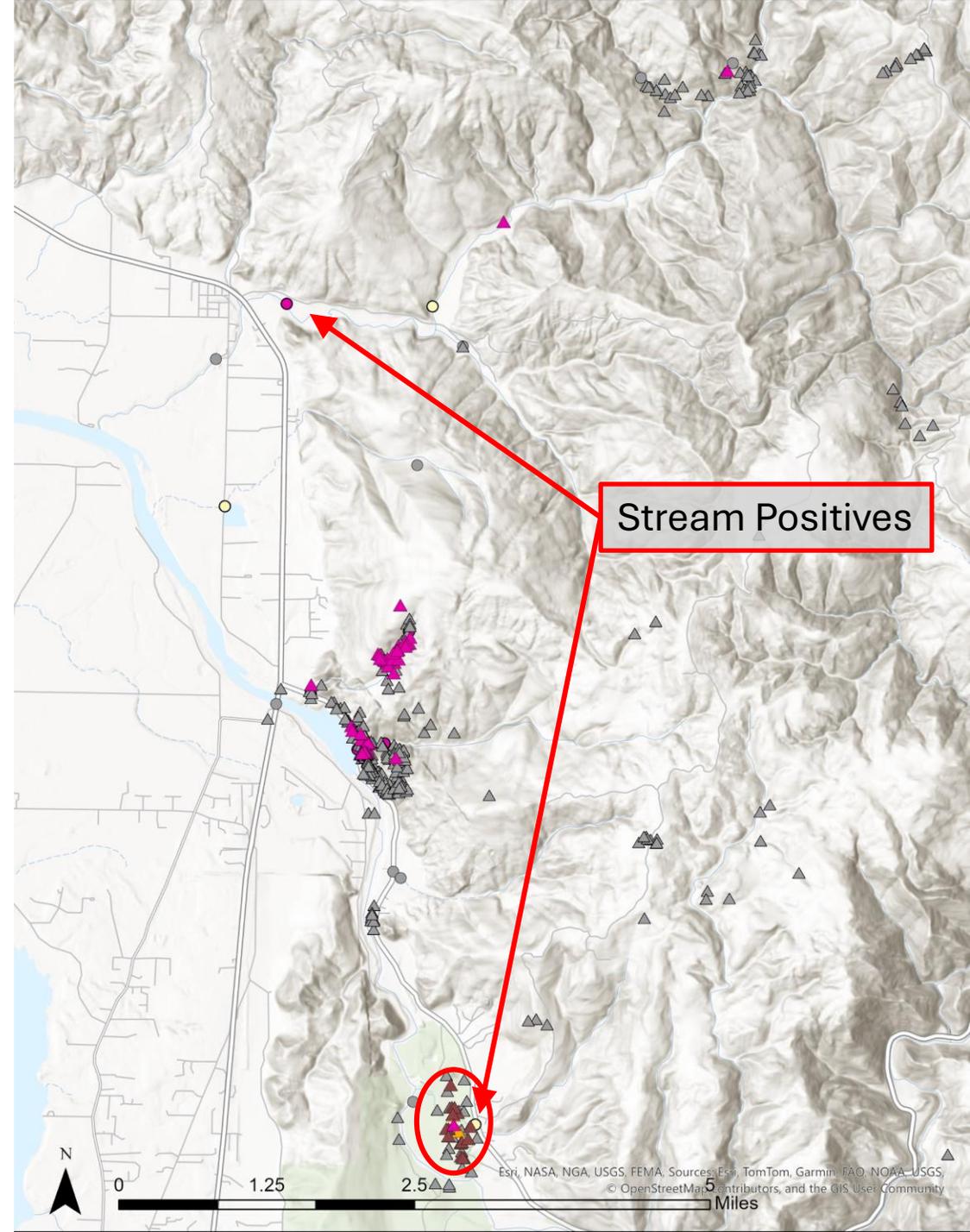
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NA1 infestation now across Smith River in campground
- **Rapid spread of EU1 continues**  
New detection in Peacock Creek leads to previously unknown infestation in See-tr'ee-ghin-dvm-dvn near Tanoak Drive
- **NA2 found co-occurring with EU1**  
No more geographical barriers to genetic recombination



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