



WPBR in SoCal

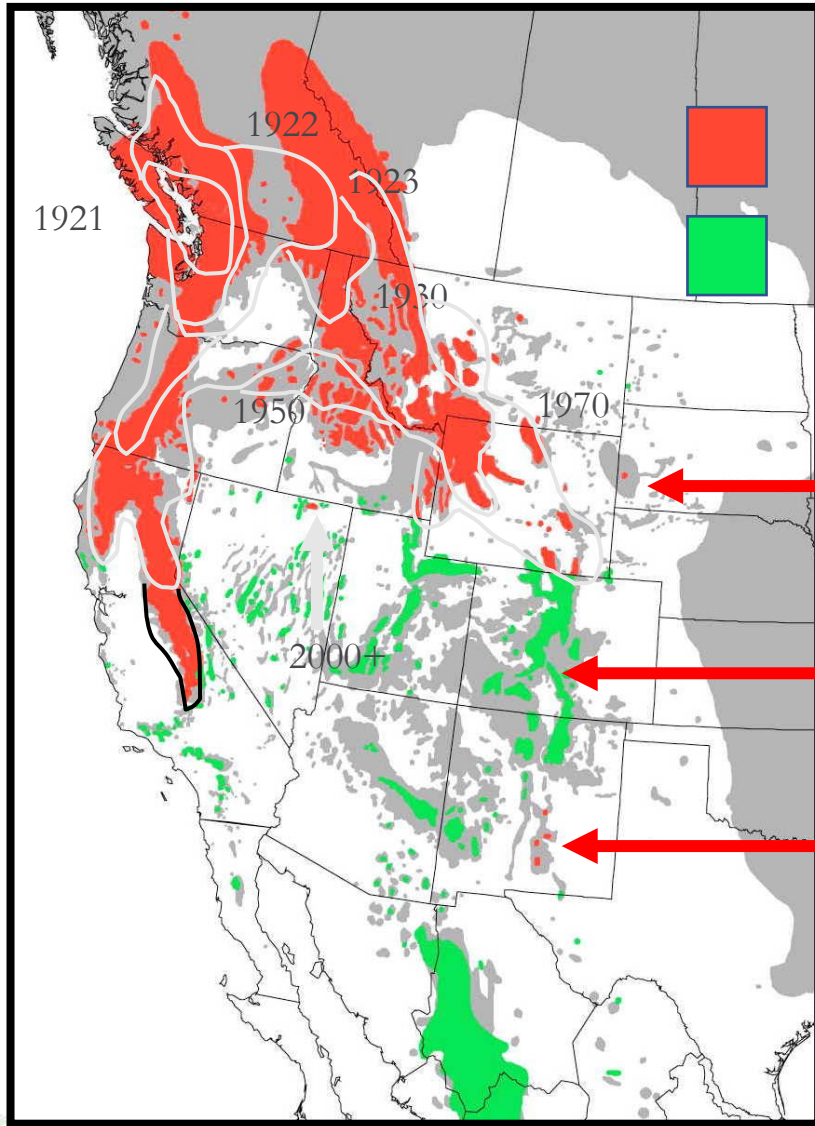
Charlie Barnes

Pathologist, Southern Zone

Overview

- History with spore pics
- *Ribes* species
- Eradication
- Sentinel plots
- Torrey pine results





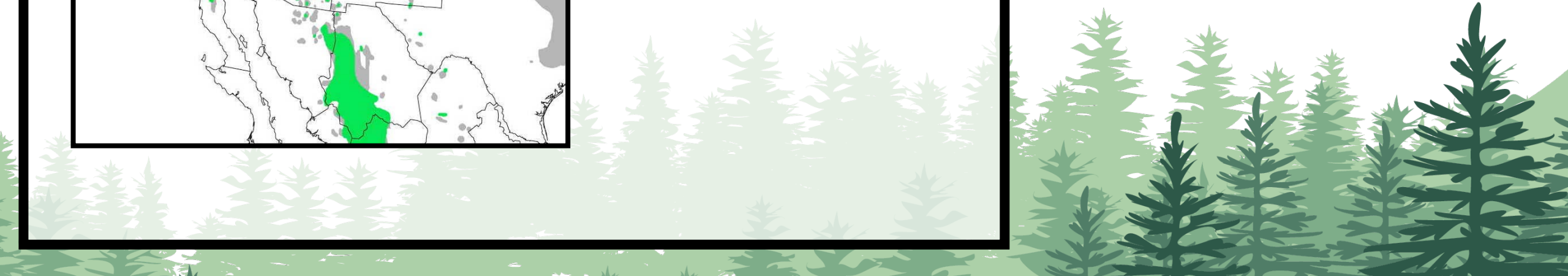
WPBR 5-needle pine rust

Disease free

2000+

2004- Bristlecone pine

1998 southwestern white pine



Fall of 2021

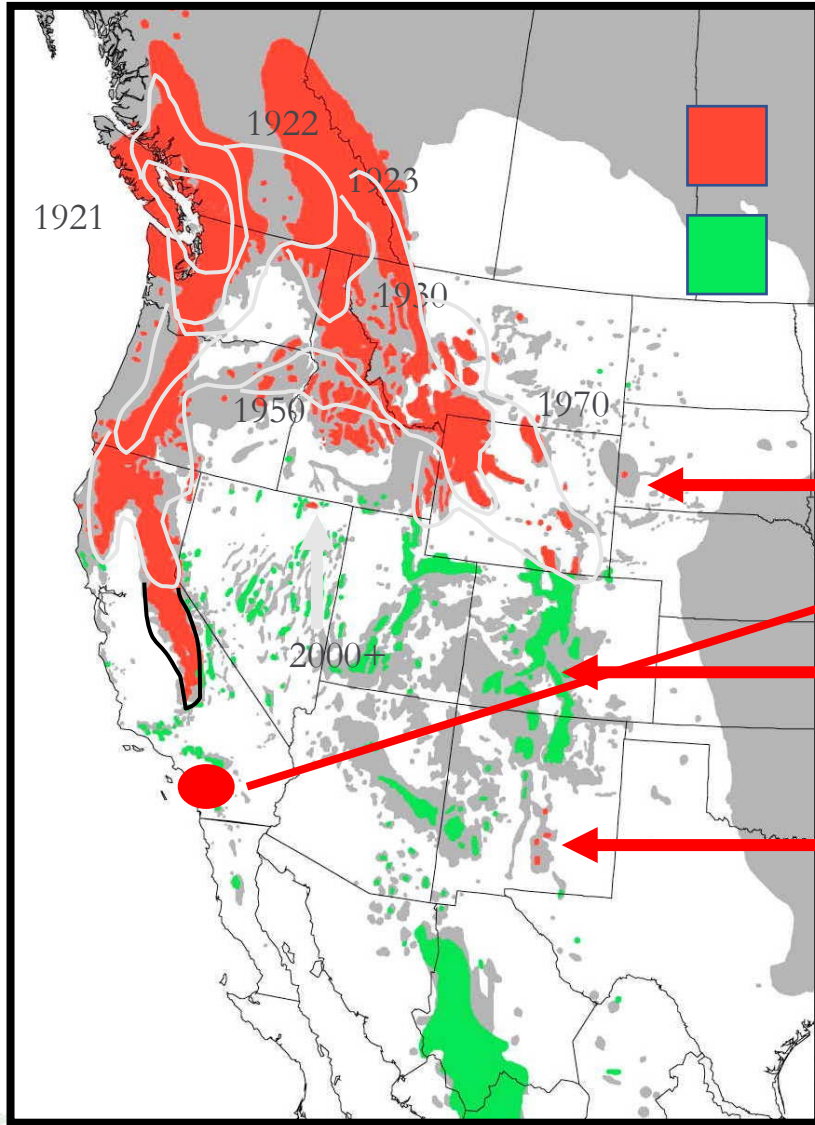
- Sunday 21 Nov 2021
- 150 miles to the south



Fall of 2021 (cont.)

- Sunday 21 Nov 2021
- Directly below the rusted leaves





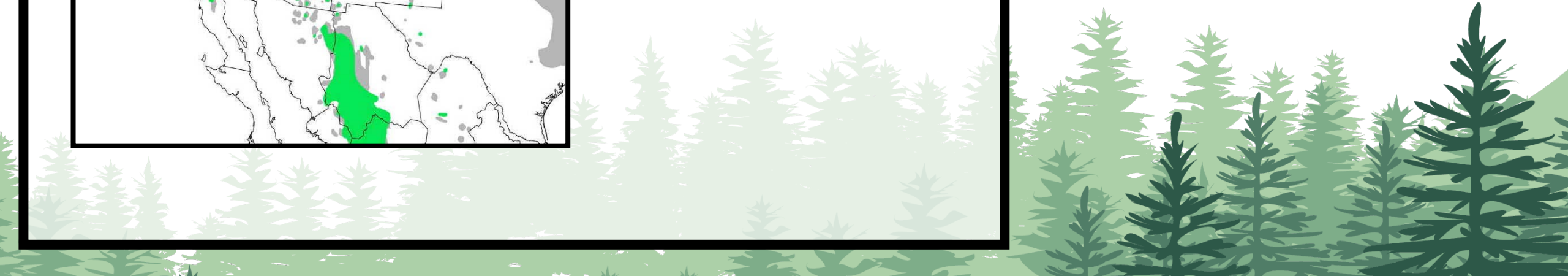
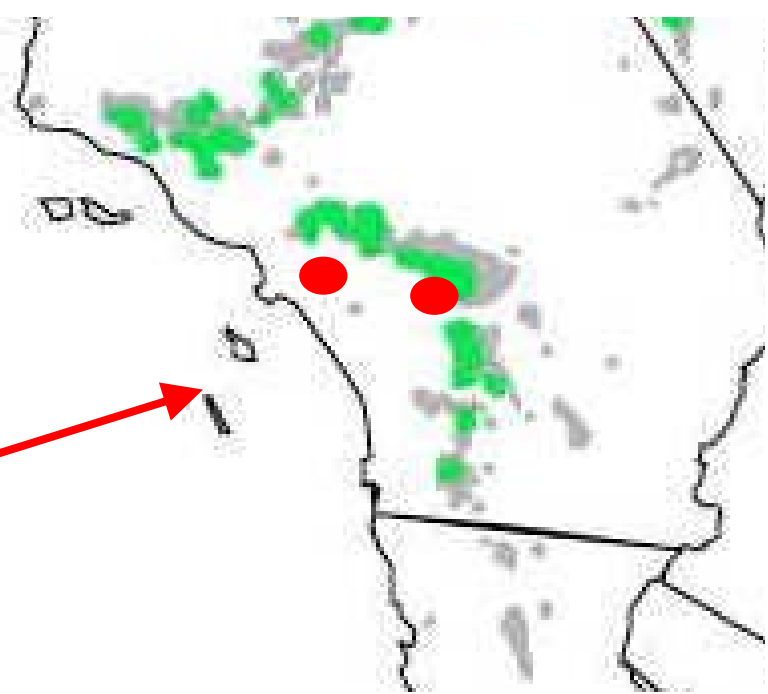
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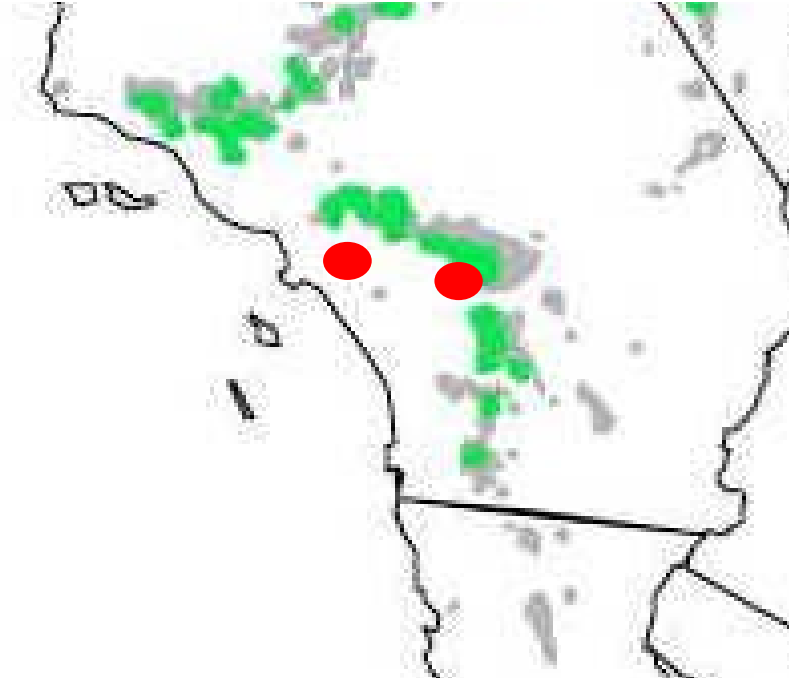
- 2021 Fall

- Eastern point only

- 2022 Spring

- Western point added and qPCR verification by Richard Hamelin, Brian Duarte, Vancouver BC

Chronology



Spring



Fall

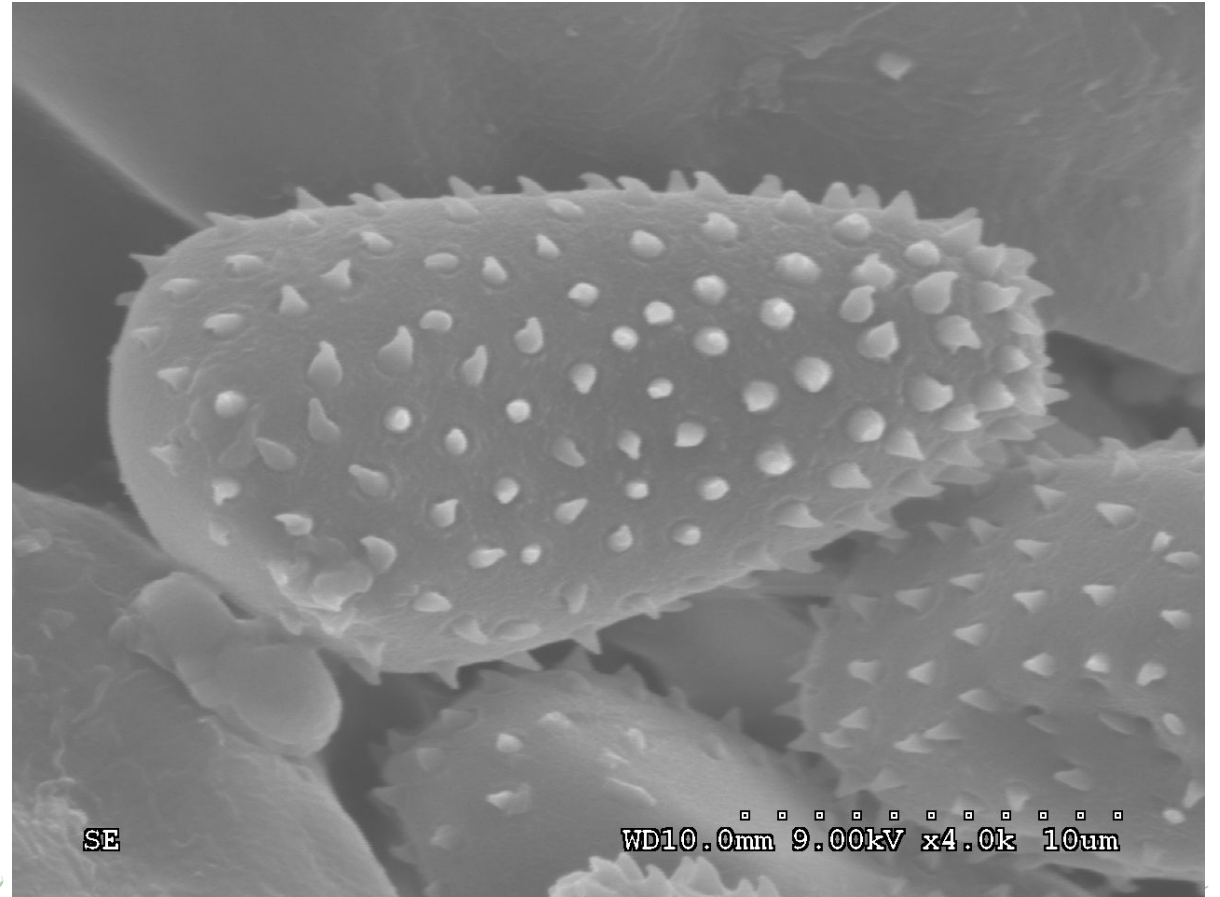


LA County
~700 ft ASL

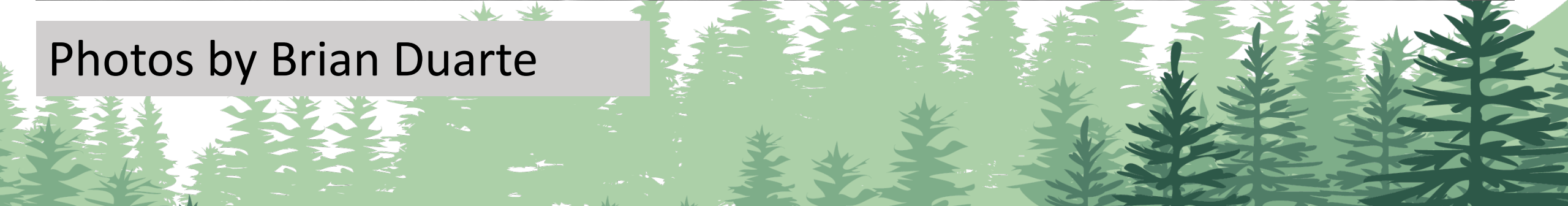


**San Bernardino
County**
~5000 ft ASL

Fig 3. Infected *Ribes aureum*. Images taken in 2022.

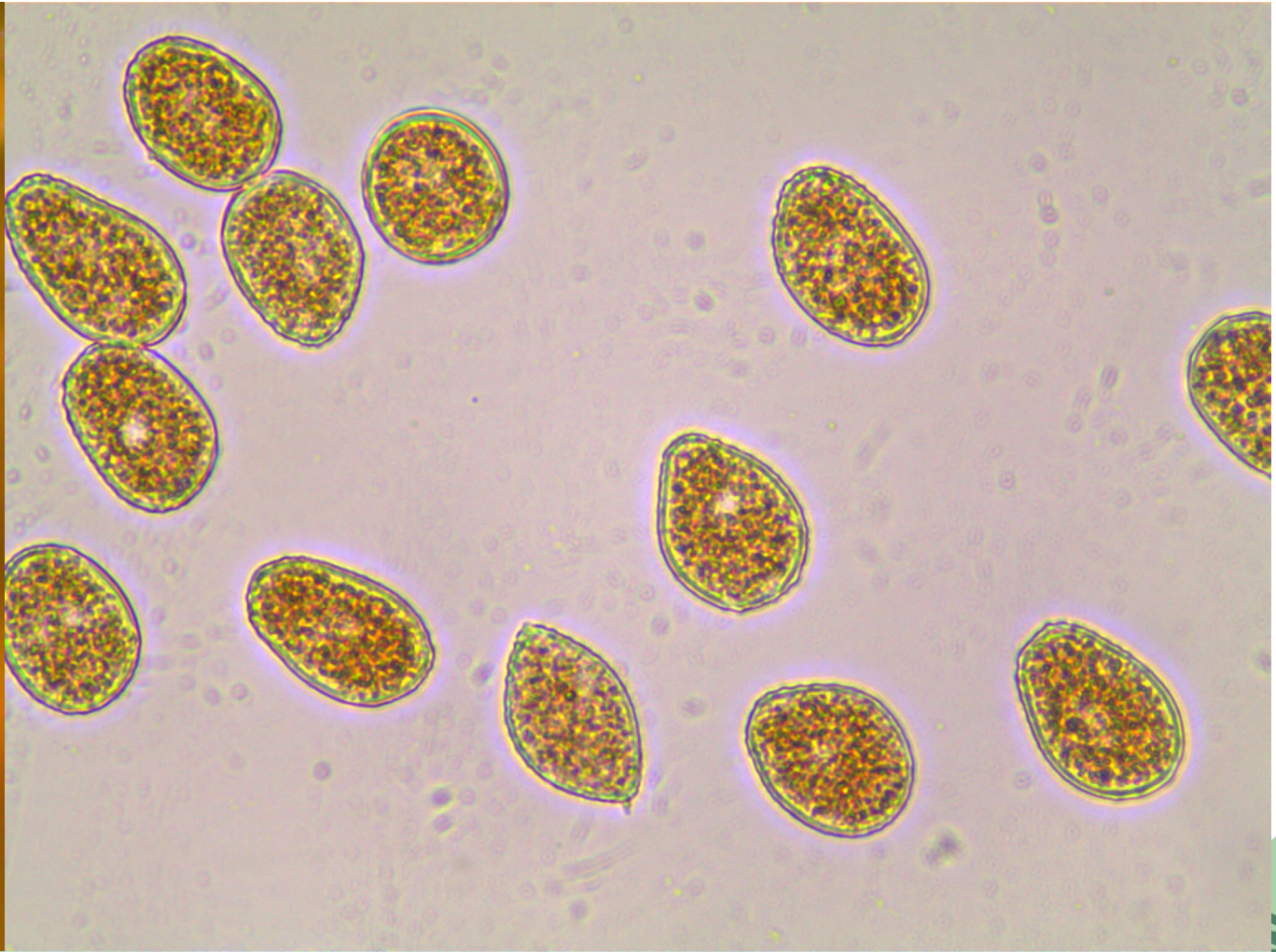
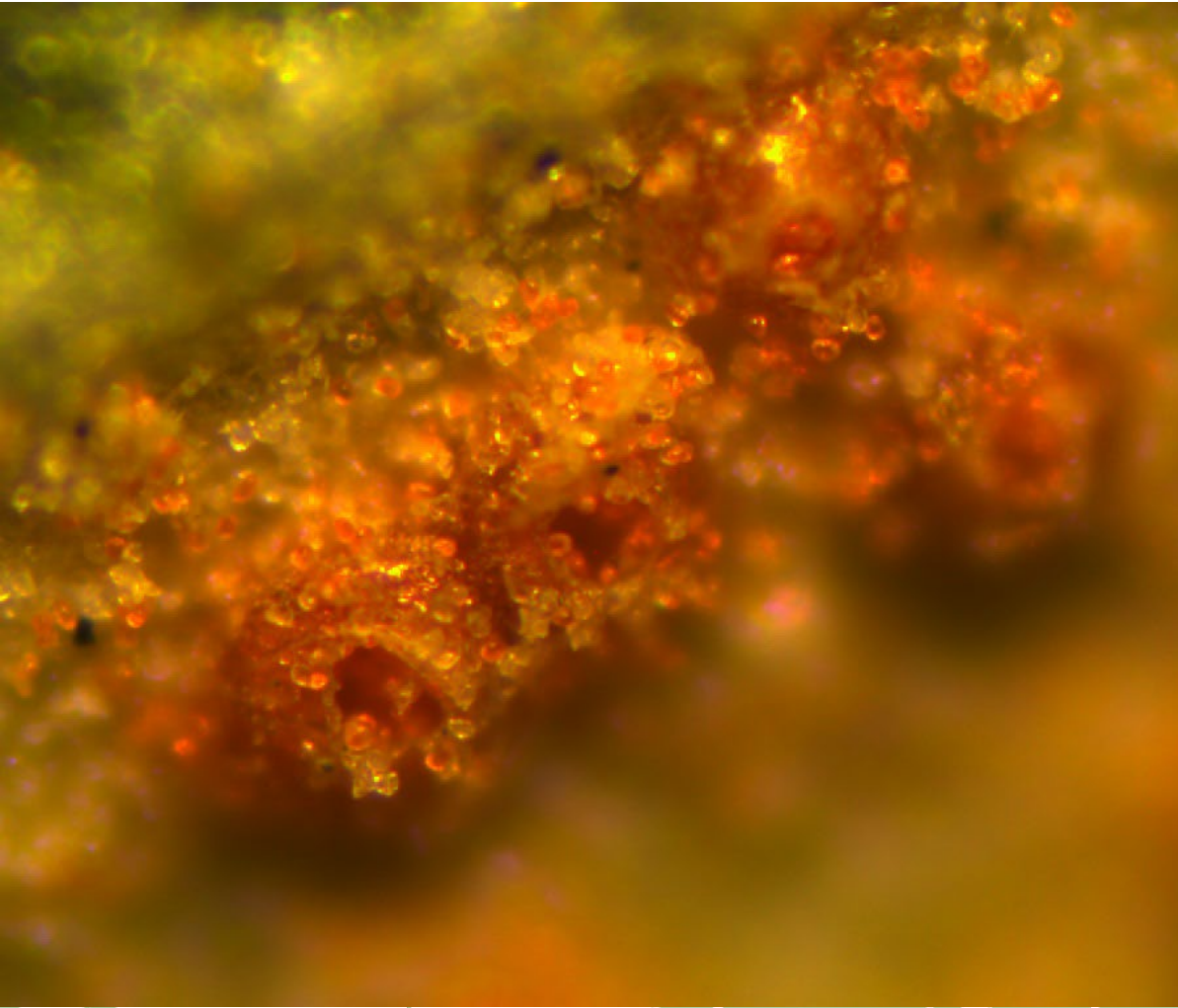


Photos by Brian Duarte



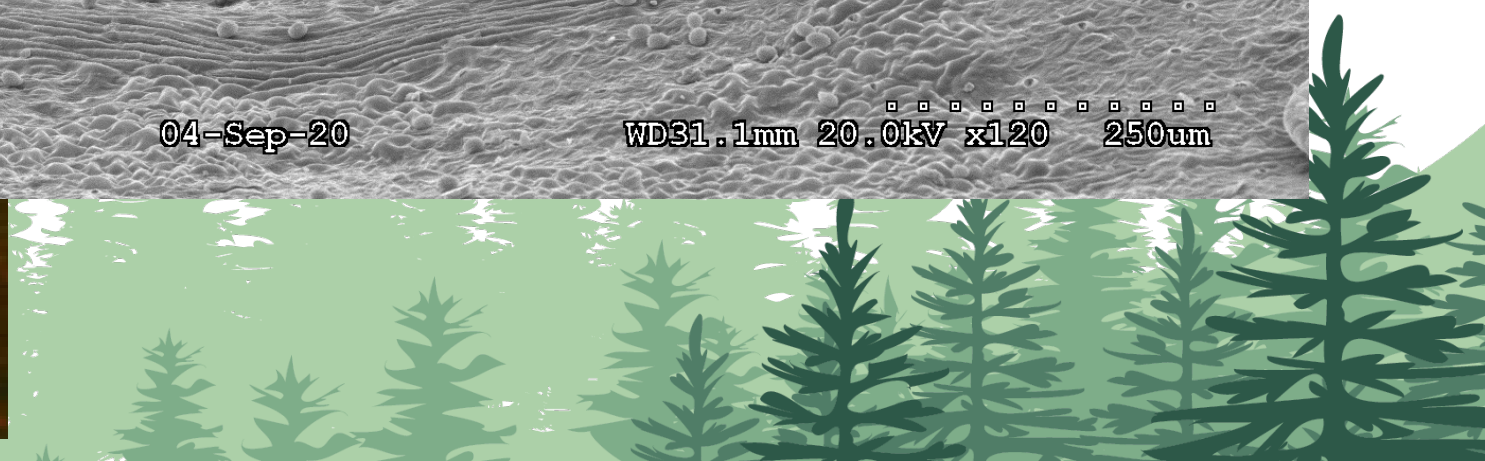
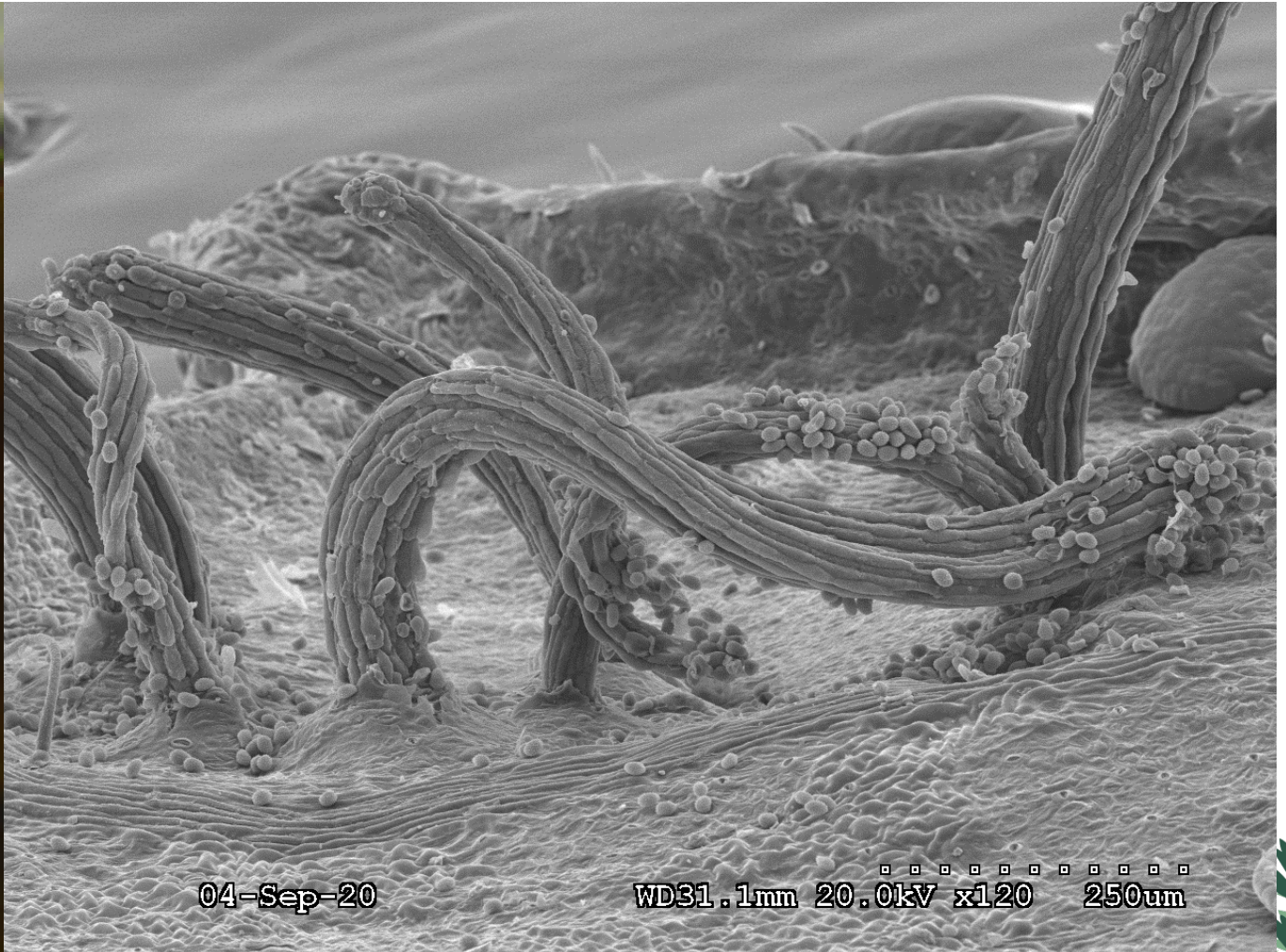
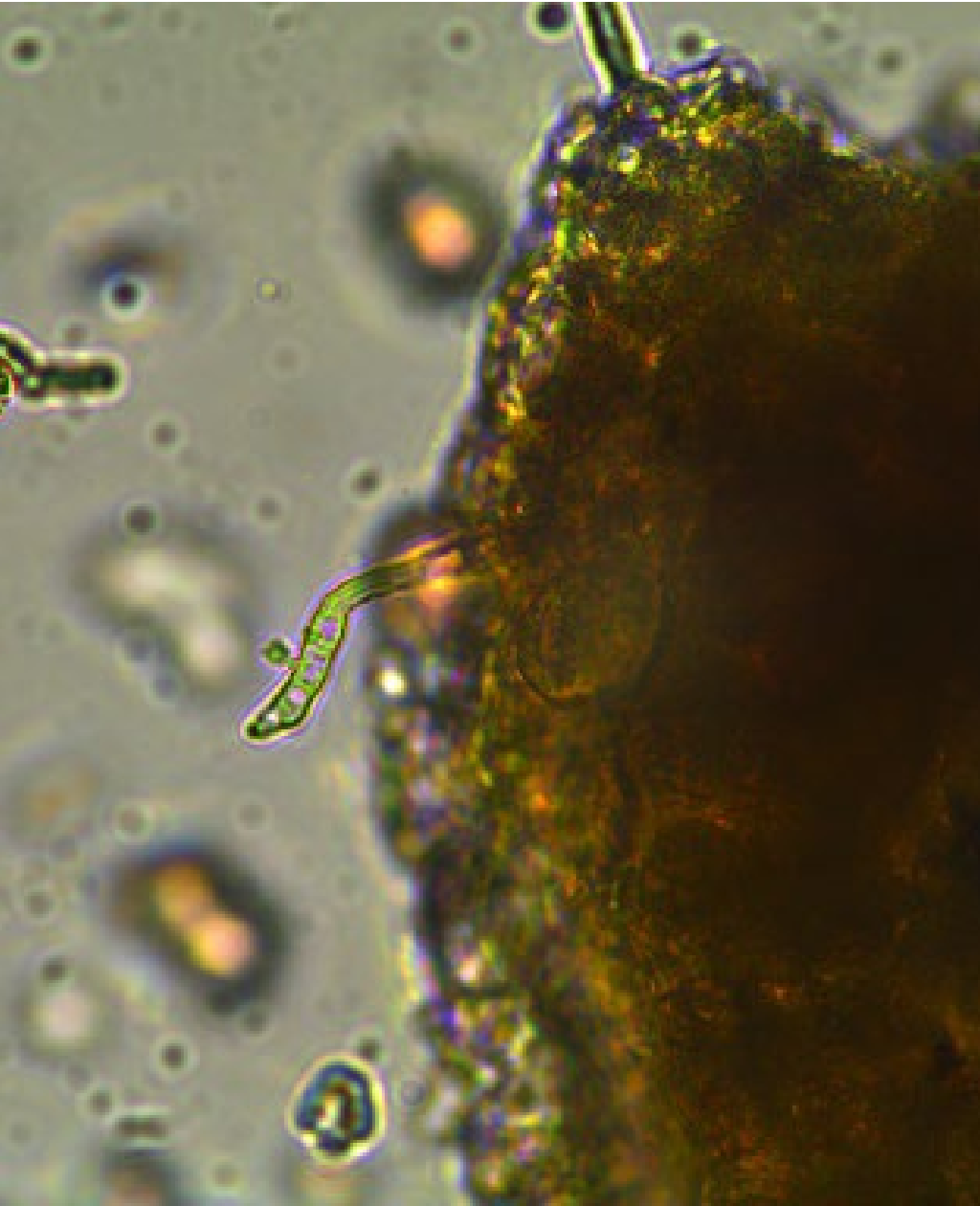


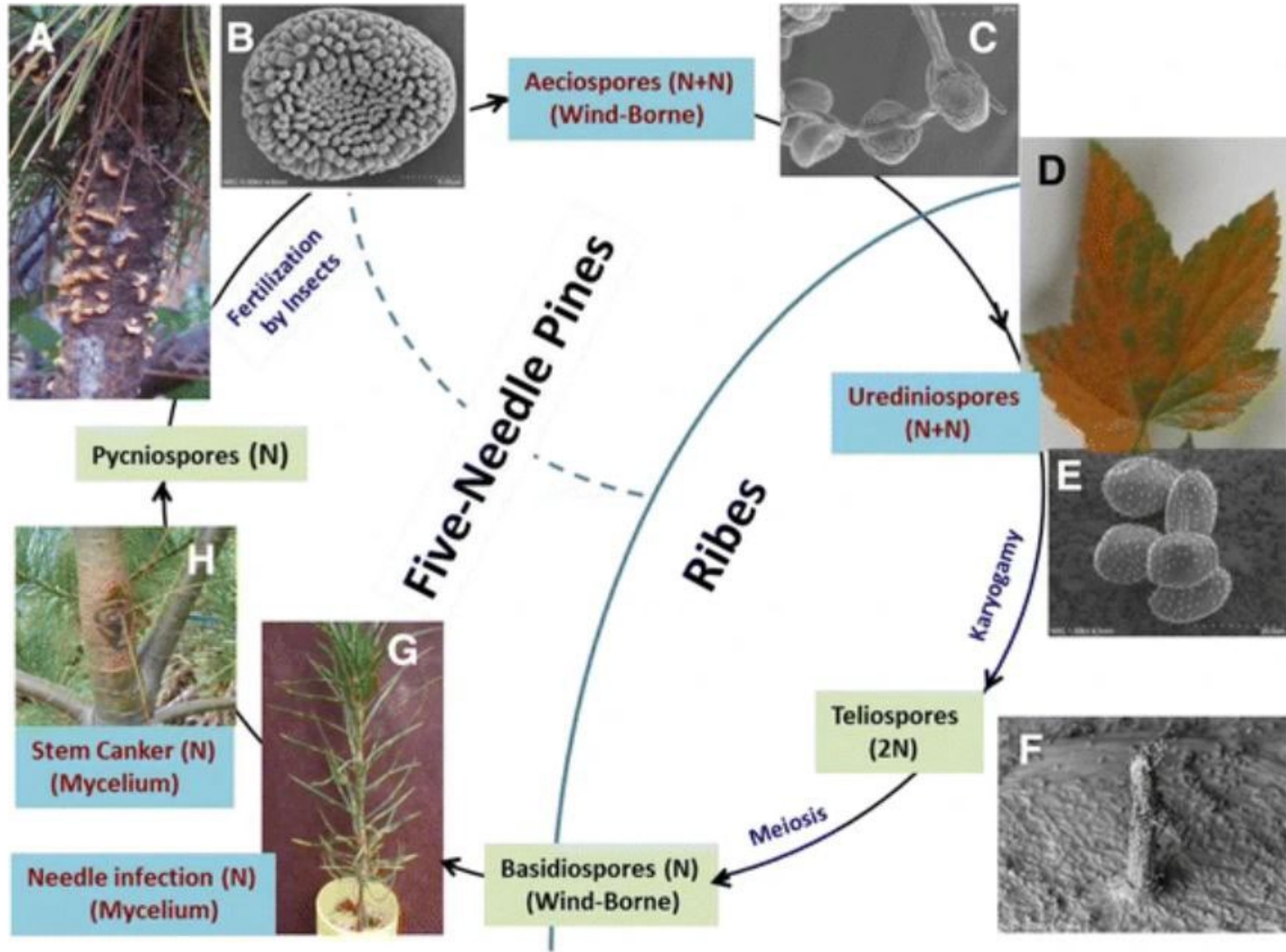
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Telia on *R. roezlii*









California White Pine Hosts



Western White



Sugar



Bristlecone



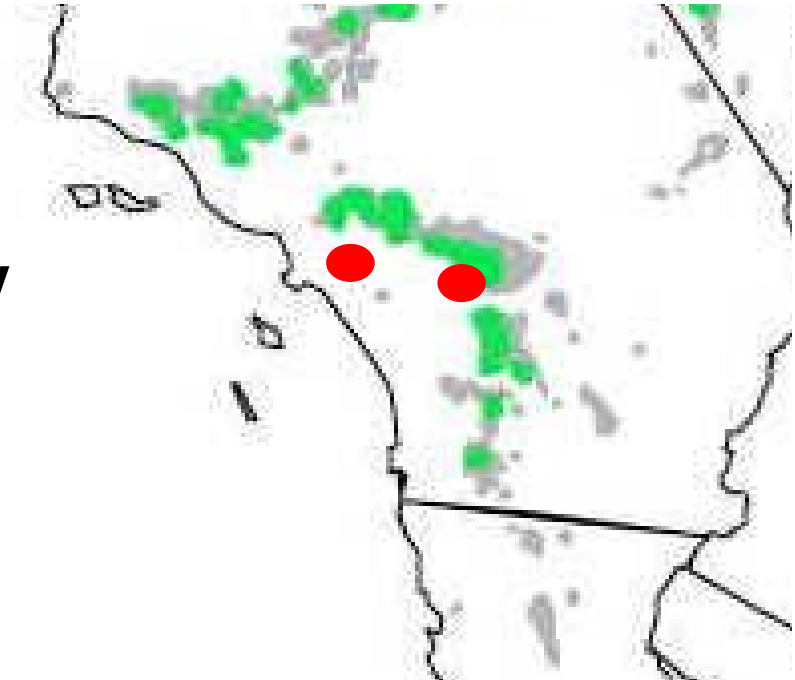
Limber



Foxtail

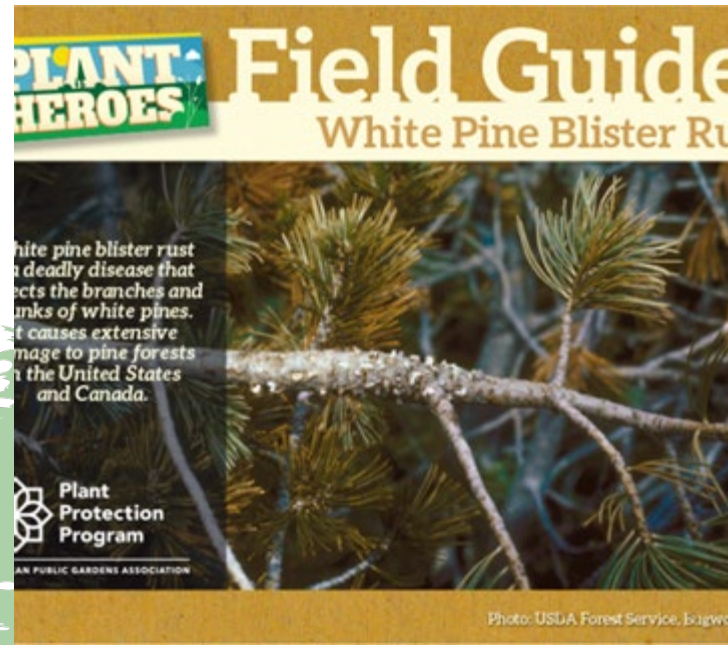
- **2021 Fall**
 - **Eastern point only**
- **2022 Spring**
 - **Western point added and qPCR verification by Richard Hamelin, Vancouver BC**
 - **Visiting nurseries**

Chronology (cont.1)



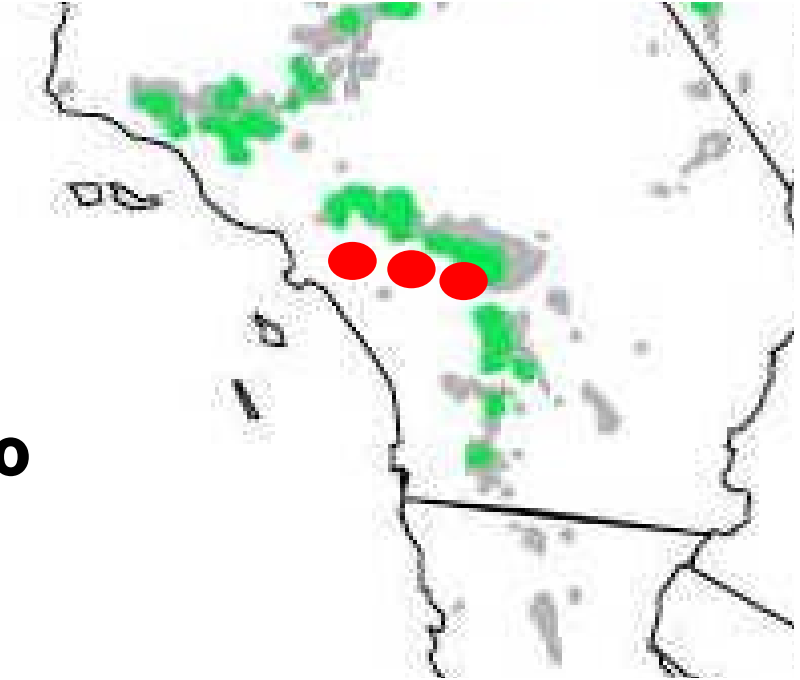
Other nurseries

- Kim and I visited local nurseries
- Richard Snieszko put me in touch with American Public Gardens Association
- Put out announcements to 27 nurseries, 19 in CA, 7 in AZ, 1 in NV



Chronology (cont 2)

- **2023**
 - **I was told about the central point**
 - **Eradication at eastern location**
 - **Other *Ribes* spp. sent to Richard Sniezko**





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R. aureum, *R. roezlii*, *R. californicum*, *R. malvaceum*, *R. nevadense*

C

GB

GB

C

C





Quote from Pacific Northwest Pest Management Handbook

The wild species stink currant (*R. bracteosum*), flowering currant (*R. sanguineum*), **Sierra gooseberry (*R. roezlii*), and Sierra currant (*R. nevadense*) are very susceptible.**





Susceptible

R. aureum, *R. roezlii*, *R. californicum*, *R. malvaceum*, *R. nevadense*

C

GB

GB

C

C

Resistant

R. speciosum *R. indecorum*

GB

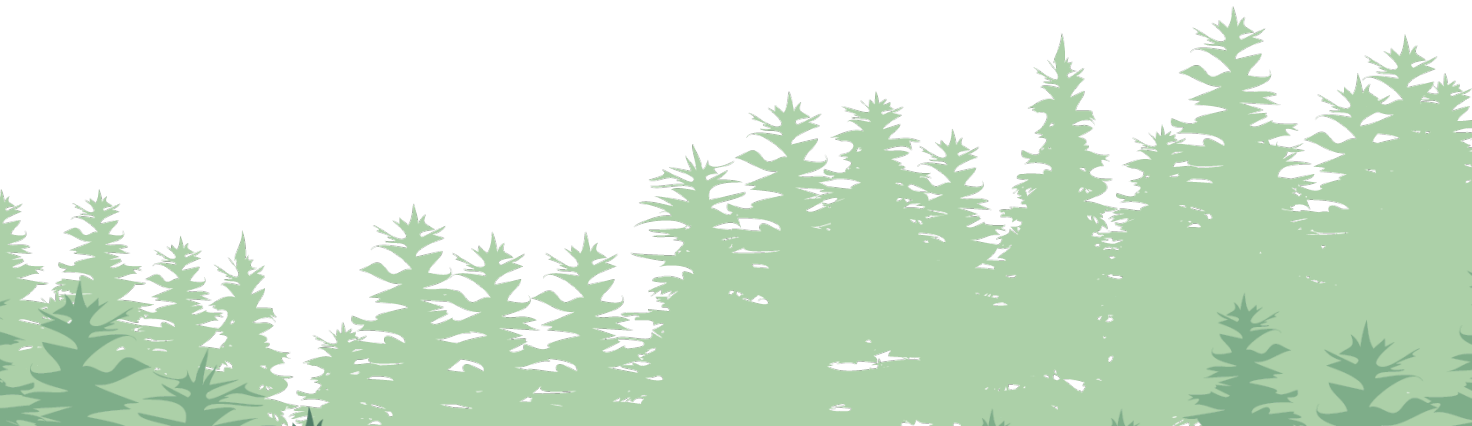
C

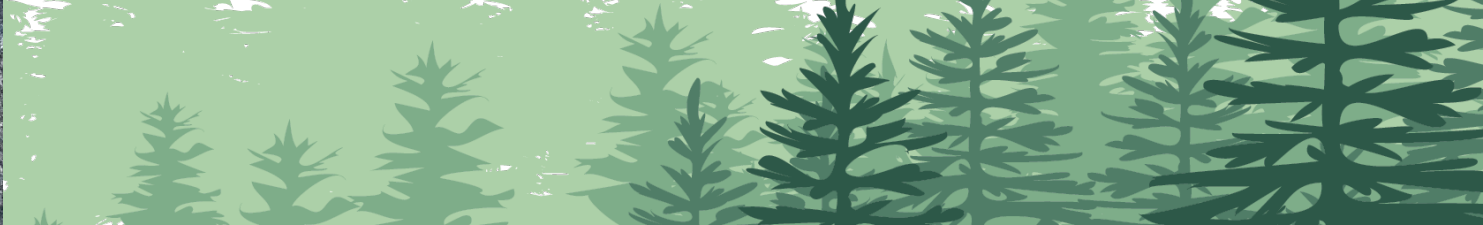




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Time to eradicate

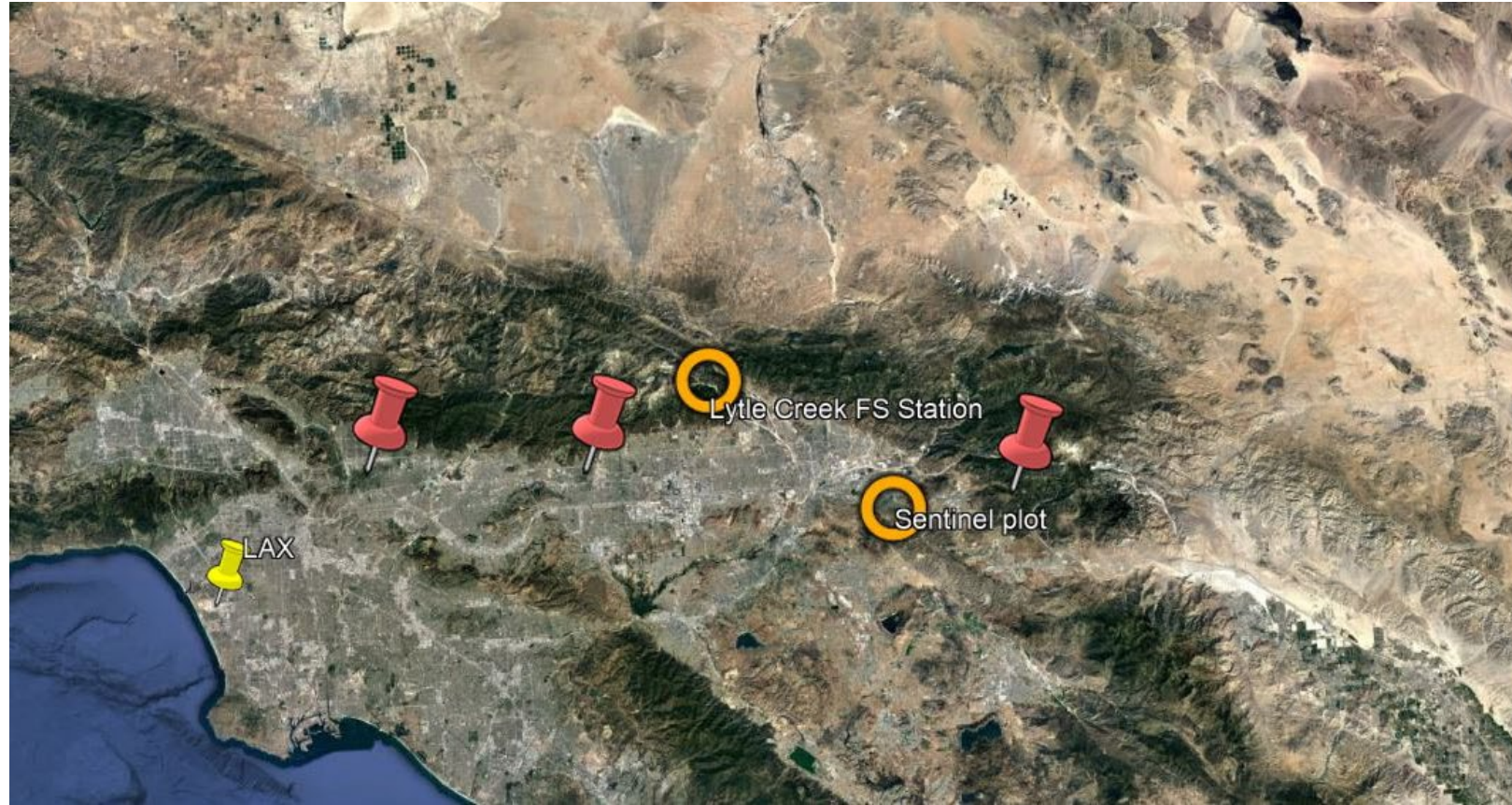






Sentinel plots

- Red pins positives
- Orange circles sentinel plots
- Yellow pin LAX

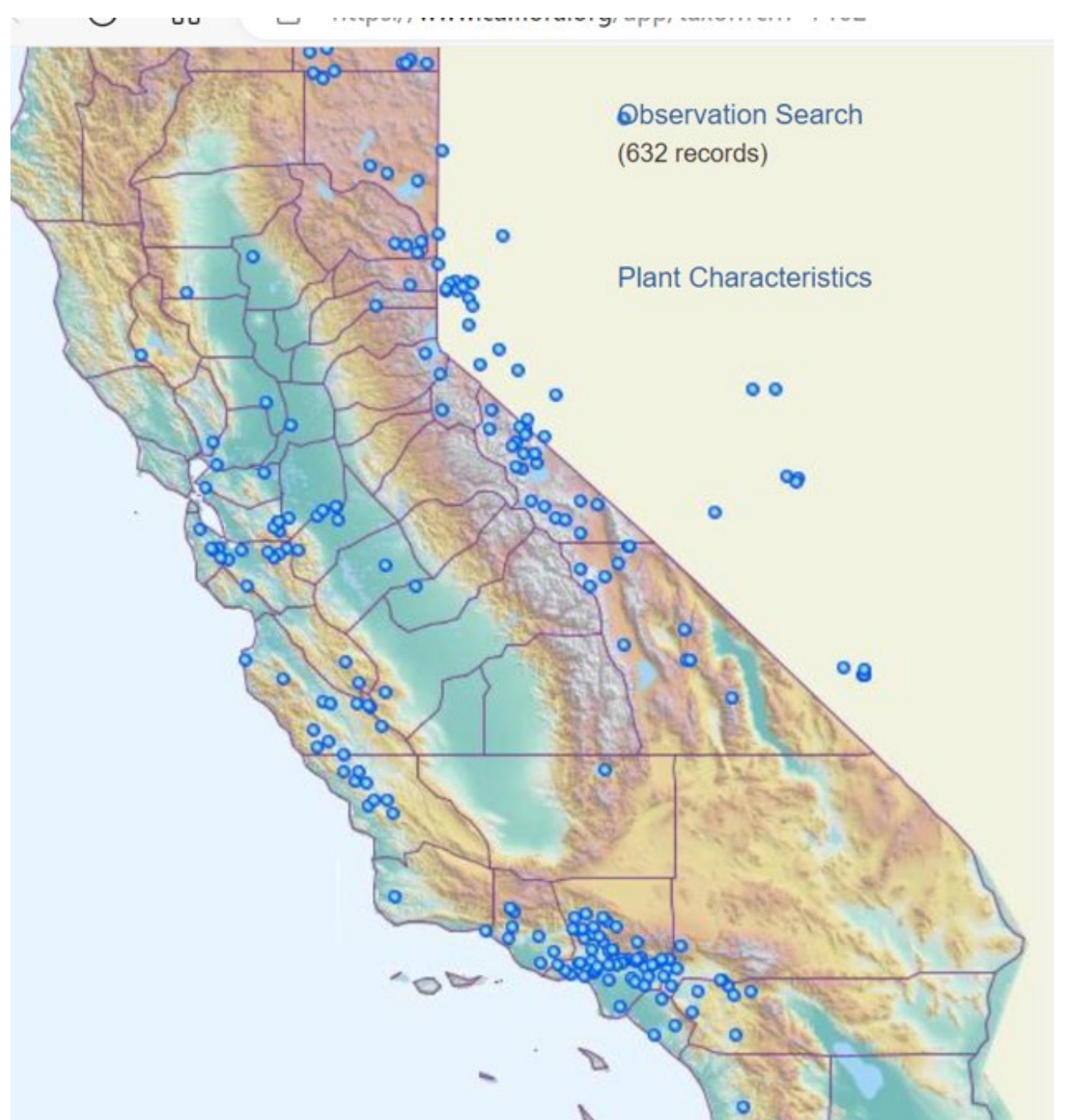


Other surveys

Map of *Ribes aureum*

[Ribes aureum](https://www.calflora.org)
[Calflora](https://www.calflora.org)

<https://www.calflora.org/app/taxon?crn=7102>



Torrey pine

Torrey Pines State Natural Reserve

- 2 populations, 2 subspecies
- Critically endangered species



Torrey pine

Santa Rosa Island

- 2 populations, 2 subspecies



Inoculation Results

- 2 populations, 2 subspecies
- Seed of both populations send to John Gleason in Placerville
- 1 of 3 trials -75 seedlings, 3 with "spots", 5 "spots" total, 1 questionable "canker"





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El Fin
