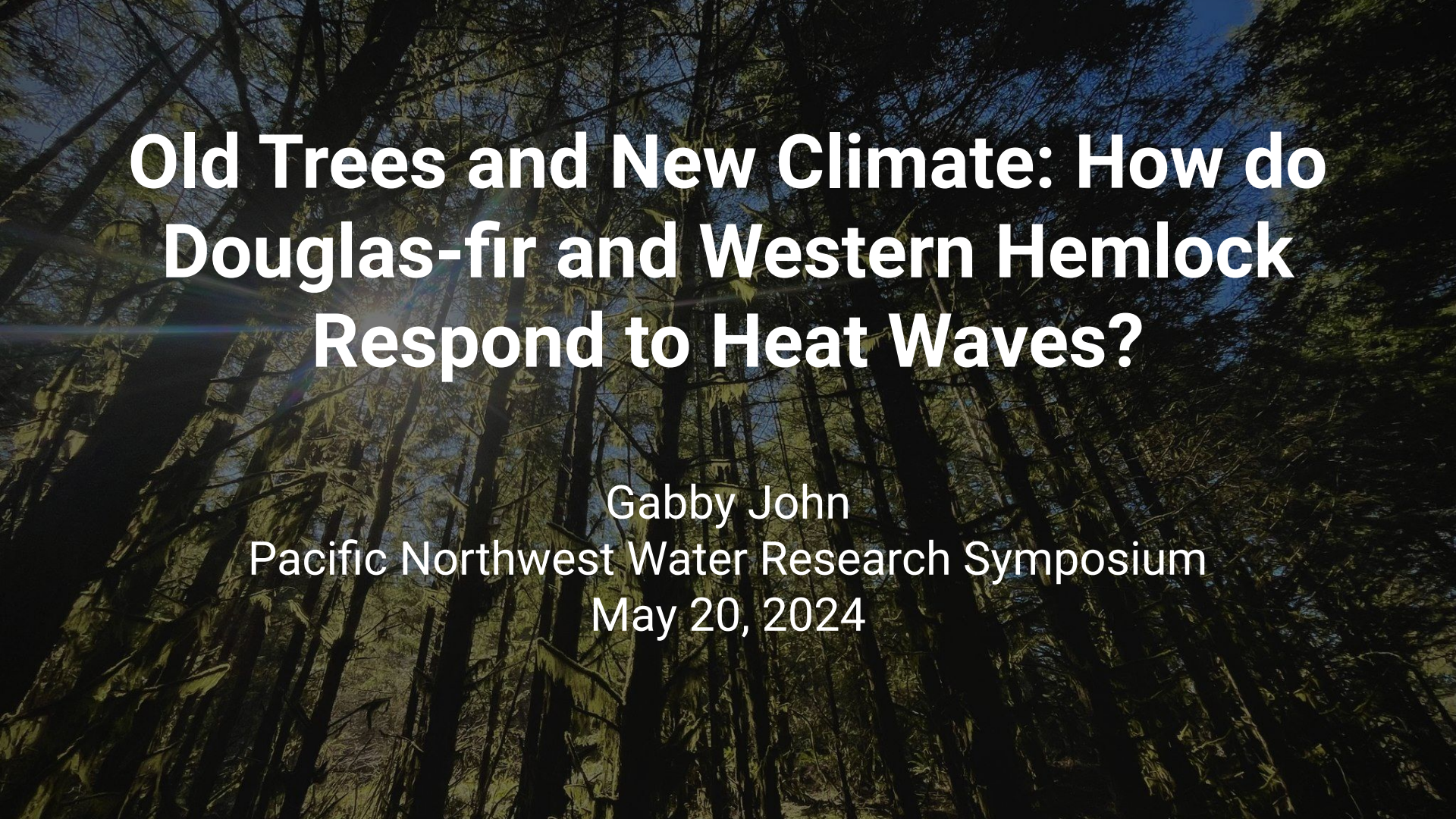


Old Trees and New Climate: How do Douglas-fir and Western Hemlock Respond to Heat Waves?

Gabby John

Pacific Northwest Water Research Symposium

May 20, 2024

Why does this topic matter?

M.S. in progress

This is my thesis project for a M.S. in Forest Ecosystems and Society in the OSU CoF

Old trees rock

“Old-growth” trees are at least 200 years old. They work differently than younger trees do

Old forests rock

Old-growth forests store more carbon, biodiversity, and habitat than younger forests, too

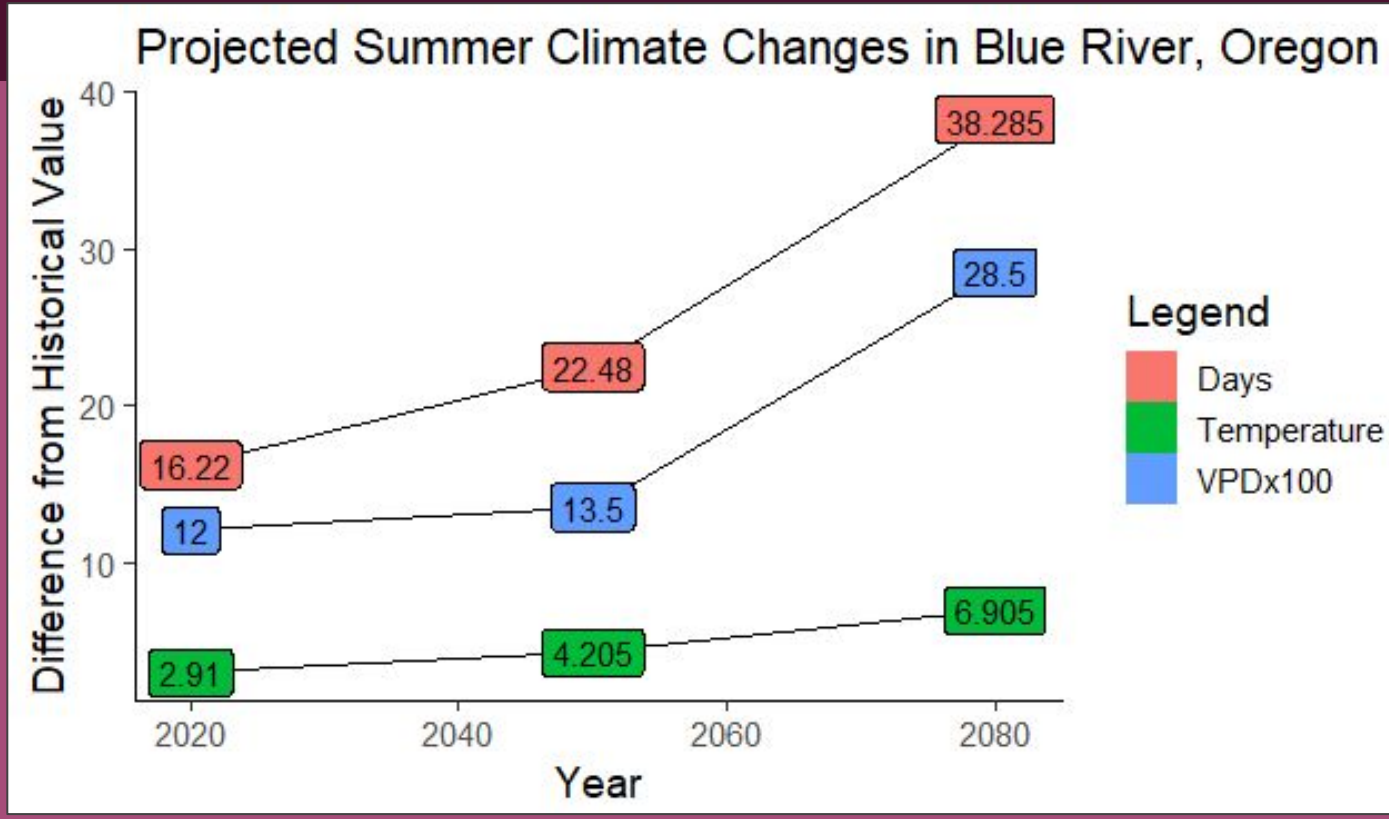
They need help

Changes in climate and land use mean old-growth forests need extra attention, which is hard

Scientists use models instead of crystal balls

Source: climatetoolbox.org

- More VPD (**v**apor **p**ressure **d**eficit)... more drought stress... less photosynthesis... less net carbon uptake...more atmospheric carbon?
- Stress brings more stress
- Fear of tipping point?



What physiological changes occur among old-growth Douglas-fir and western hemlock in western Oregon before, during, and after a heat wave?

What to do?

- Collect short and long-term data to pair tree growth and weather at the HJ Andrews Experimental Forest
  - Dendrometer data + tree cores
- Analyze data and draw conclusions
- *Coming soon…summer 2025!*

Thank You!