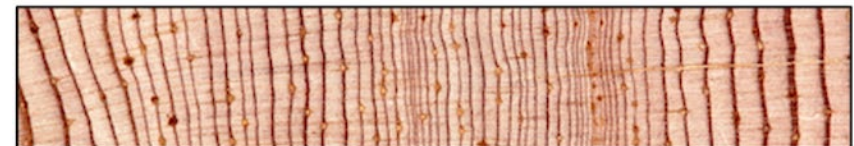


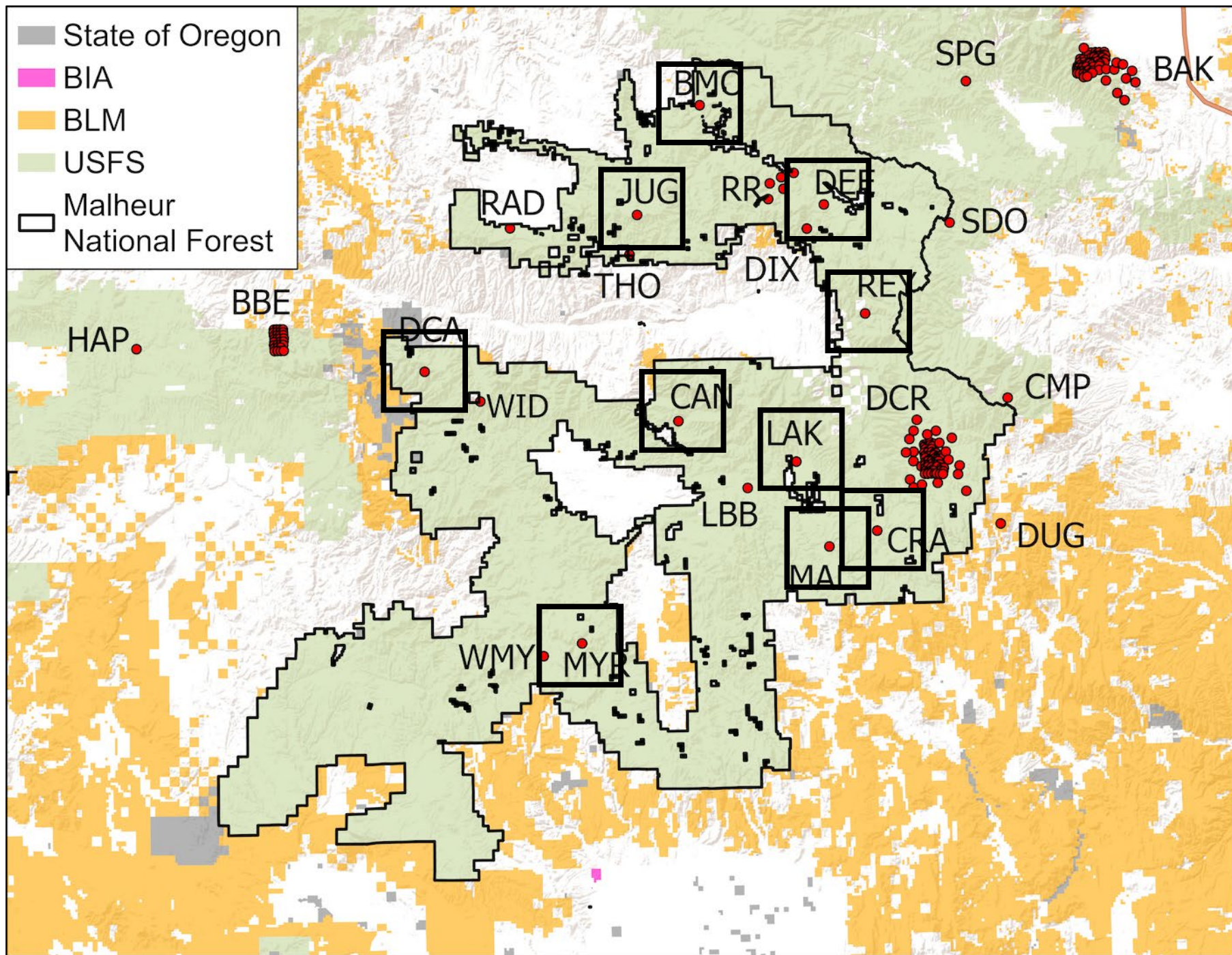
Conservation of Dry Forest Old Growth

James Johnston
Oregon State University

Malheur Monitoring and Research Symposium
May 17, 2023

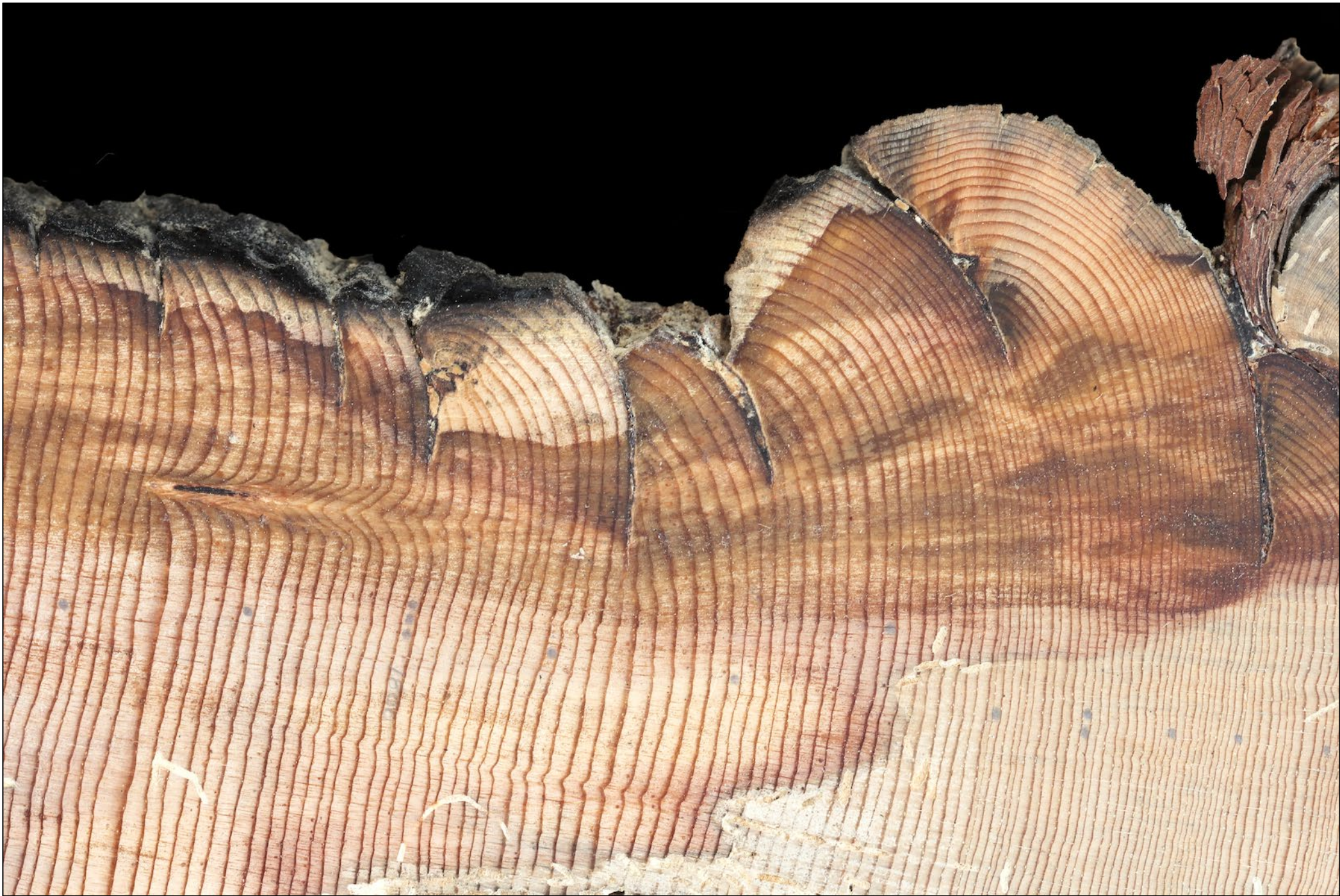


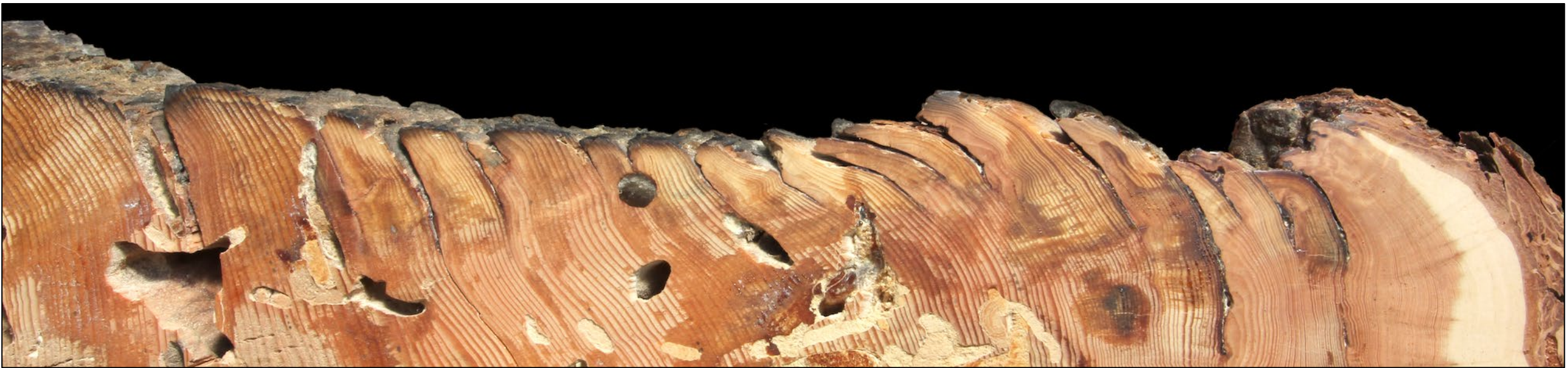


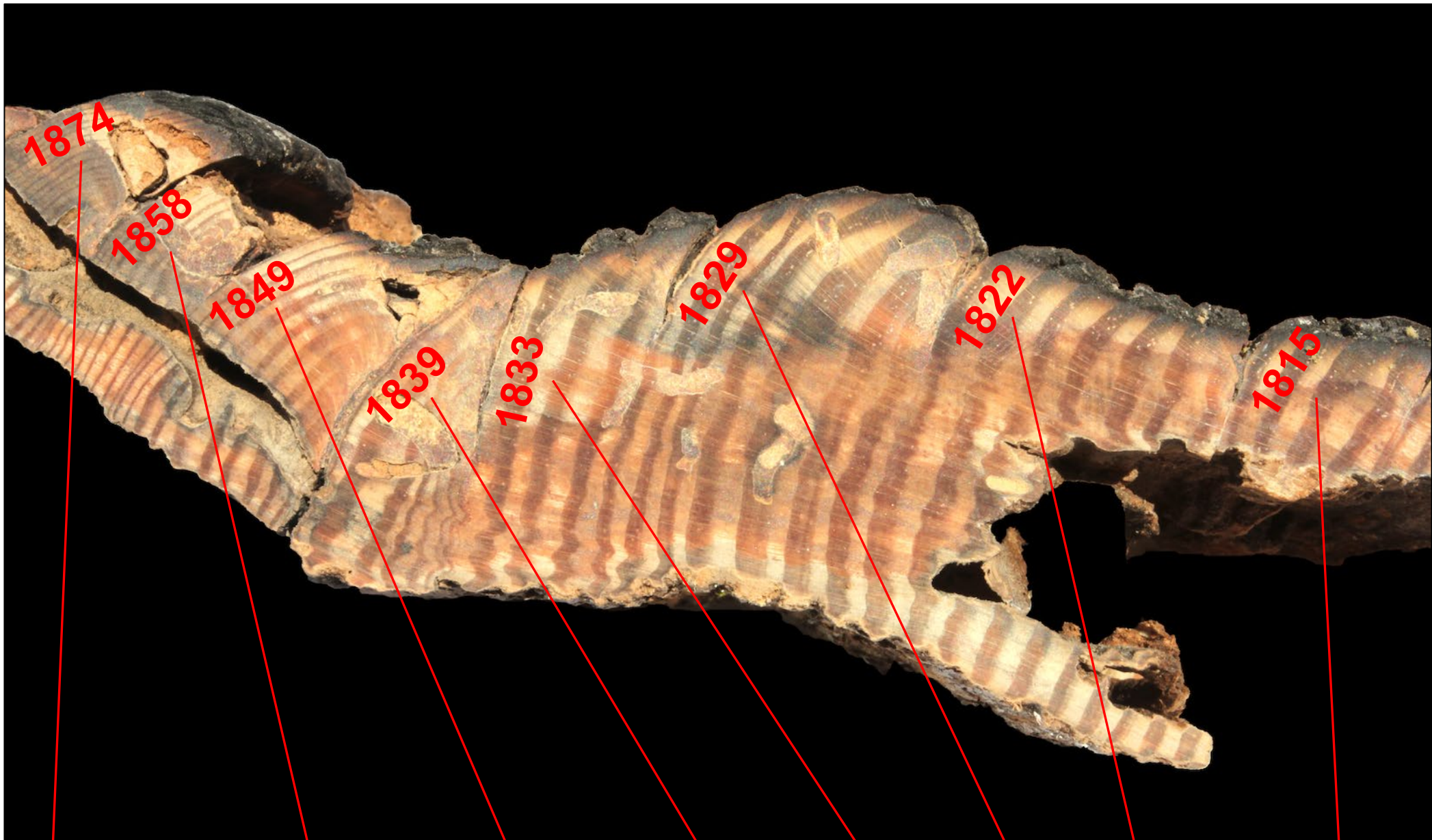












1874

1858

1849

1839

1833

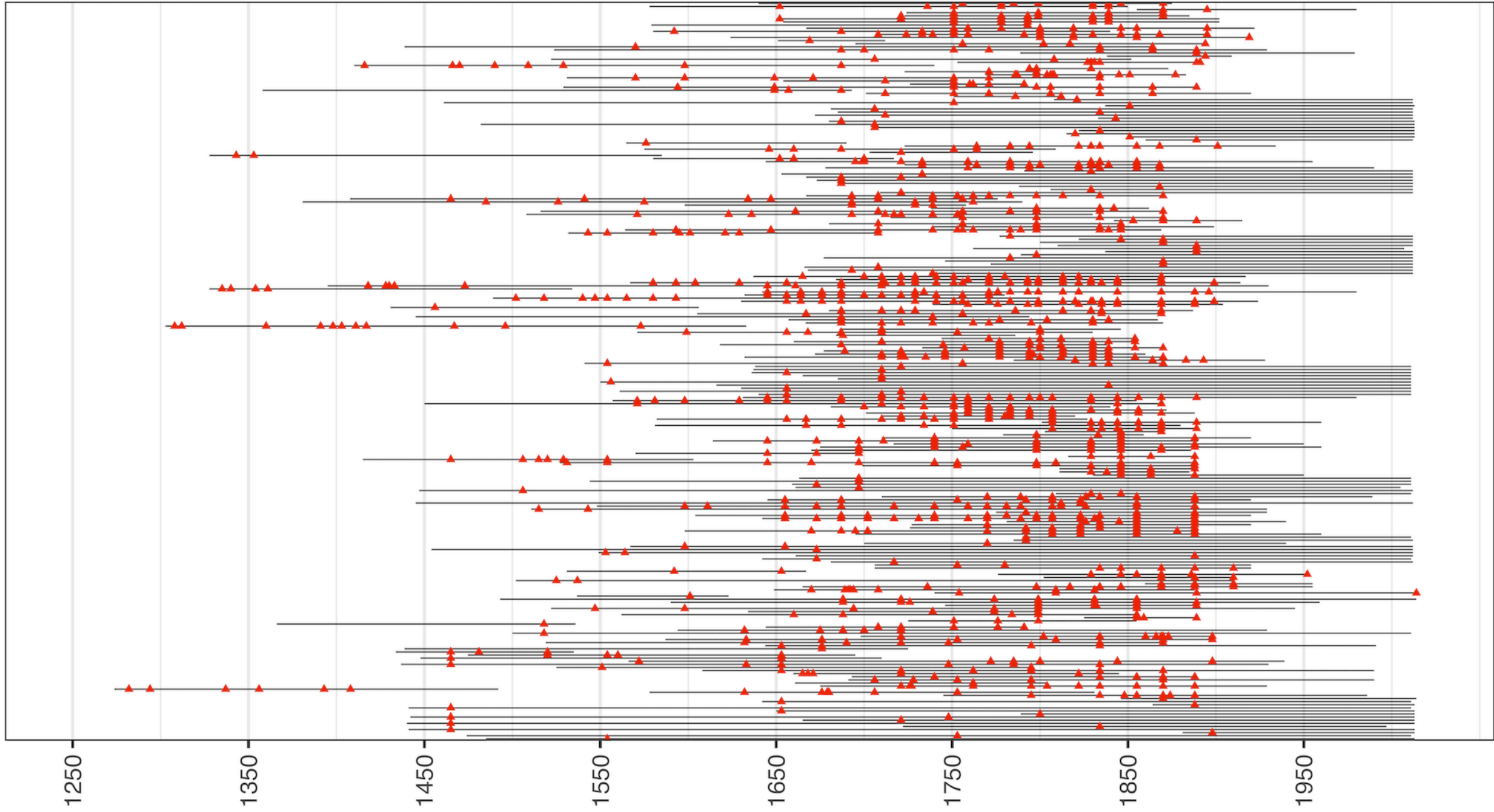
1829

1822

1815

1875

1810





Historical fire frequency = 11-18 years



Historical fire frequency = 12-21 years









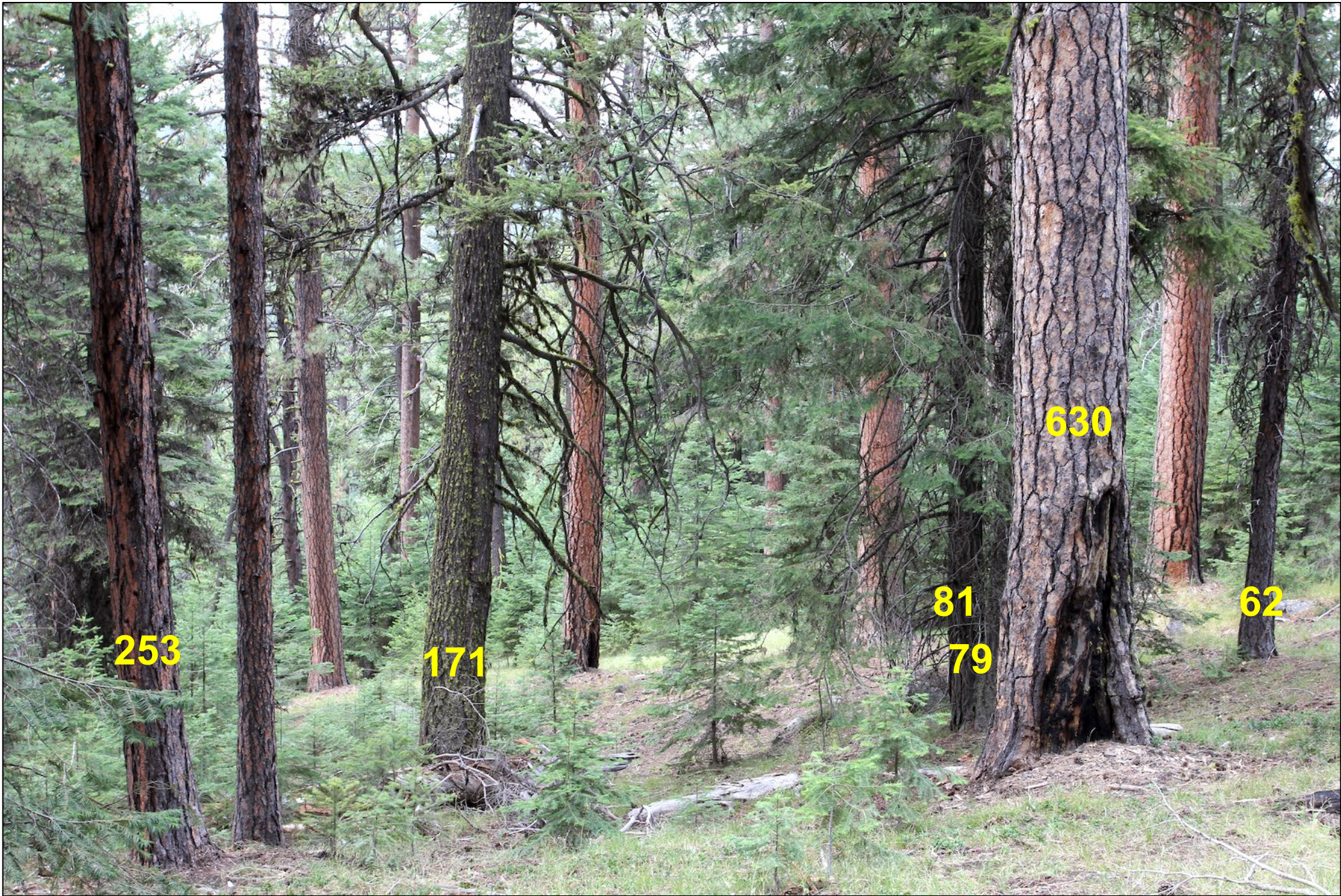


110

398

402

132



253

171

81

79

630

62



Species

Increase basal area

Ponderosa pine

57%

Douglas-fir

924%

Grand fir

2,346%

Western larch

-57%

Restoring historical forest conditions in a diverse inland Pacific Northwest landscape

JAMES D. JOHNSTON,^{1,†} CHRISTOPHER J. DUNN,¹ MICHAEL J. VERNON,² JOHN D. BAILEY,¹
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“Good agreement between the results of dendroecological reconstructions and analysis of GLO records should give managers a high degree of confidence that significant reductions in basal area and density across a wide range of forest types are necessary to restore historical conditions.”

What happened?

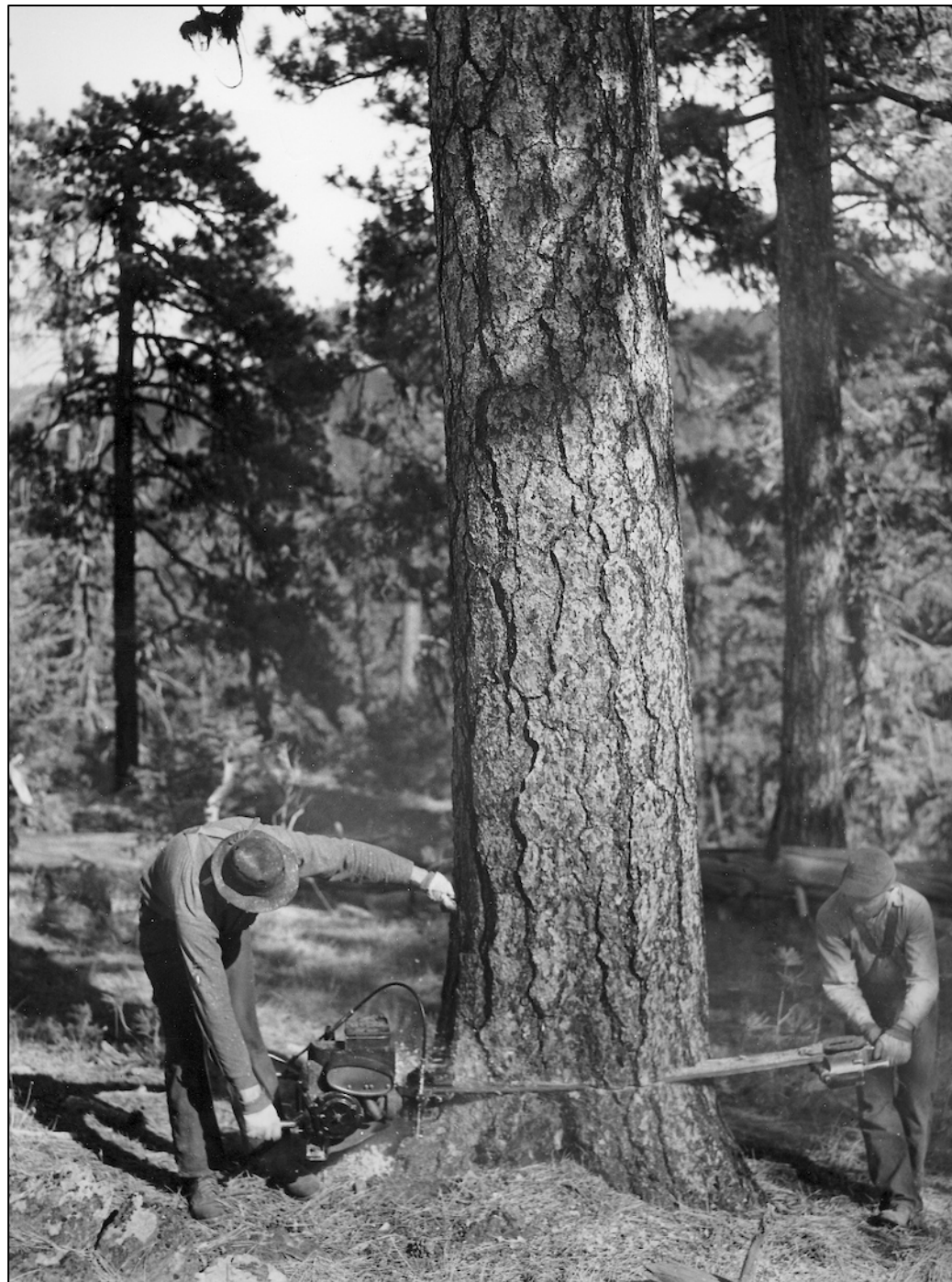


372024



154870







348163







What's happening now?







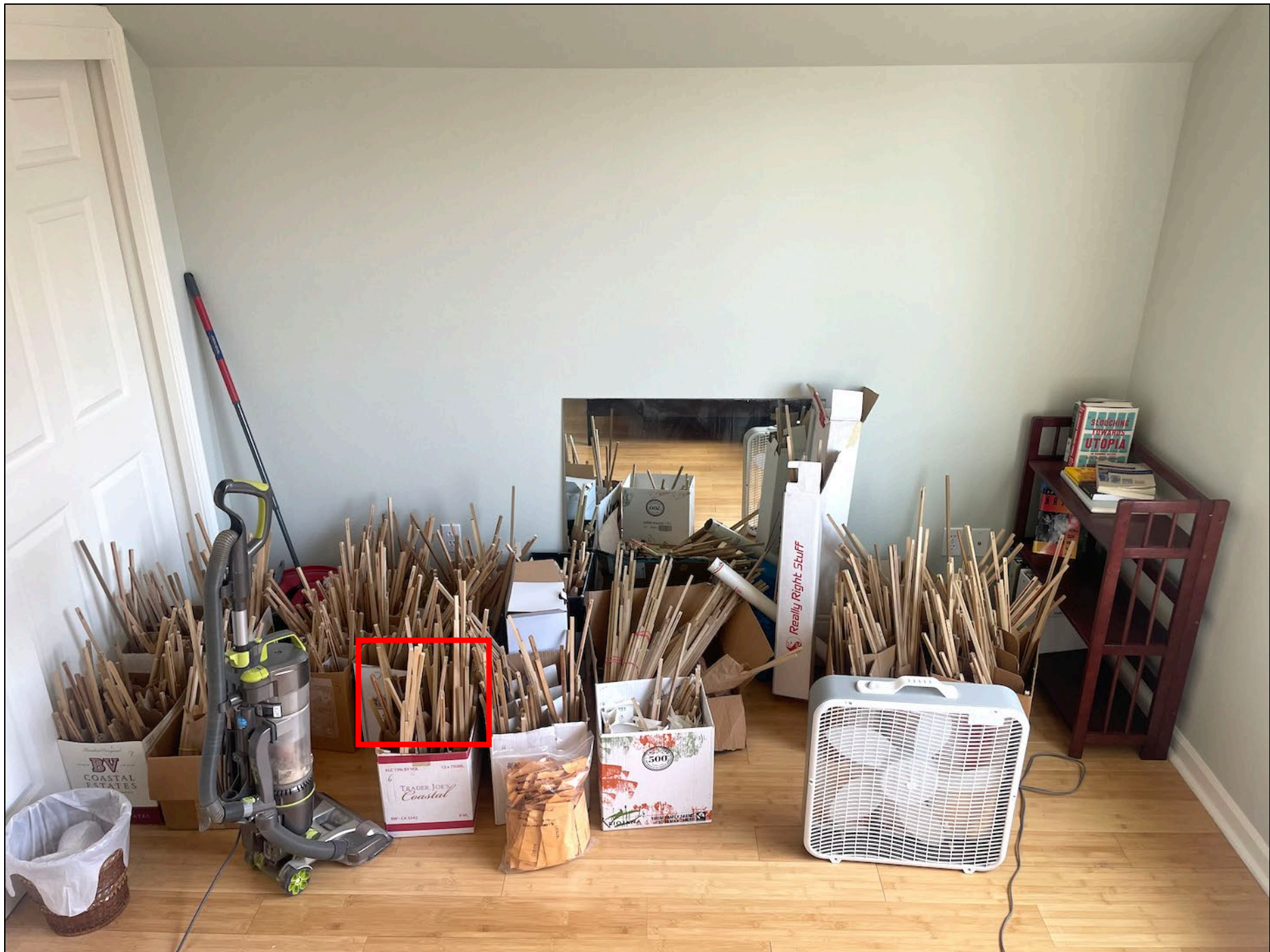














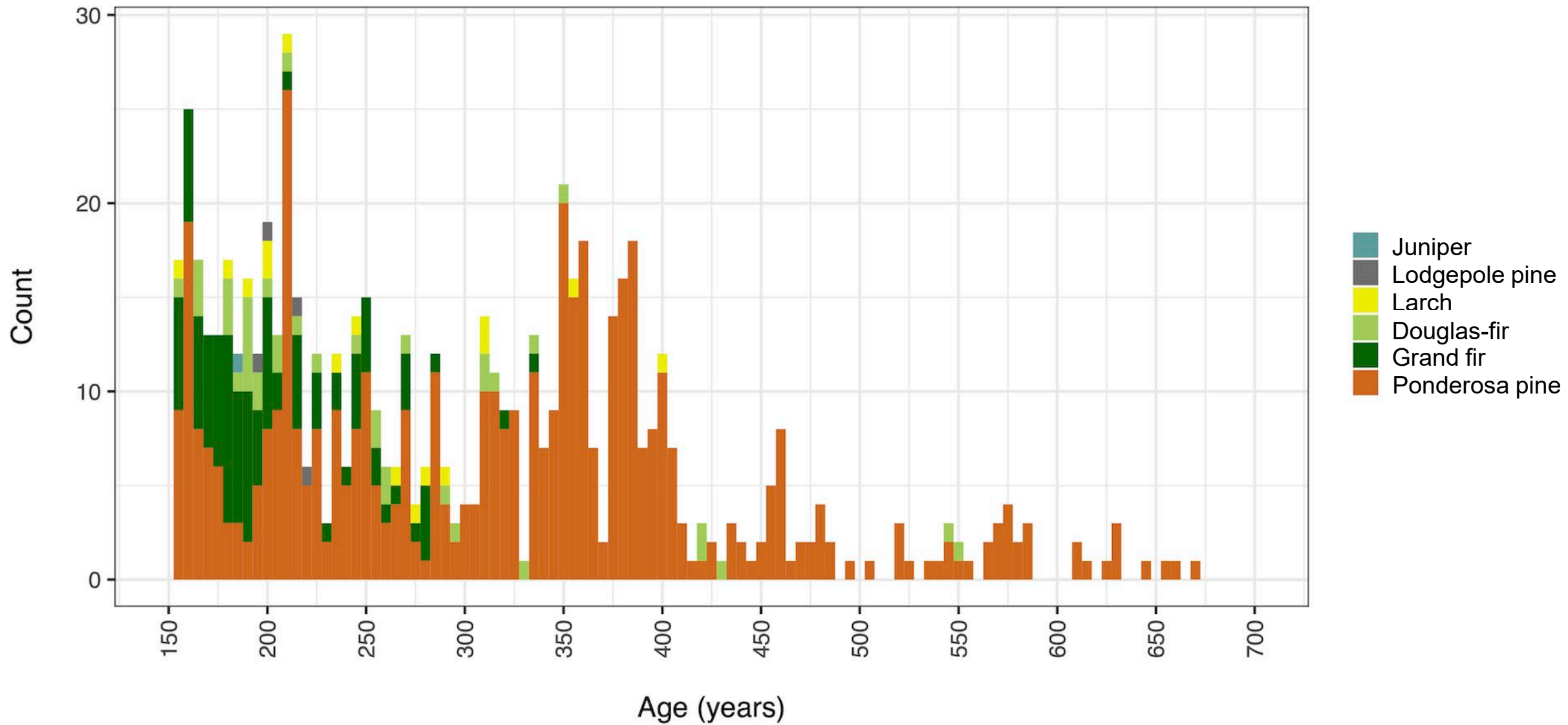
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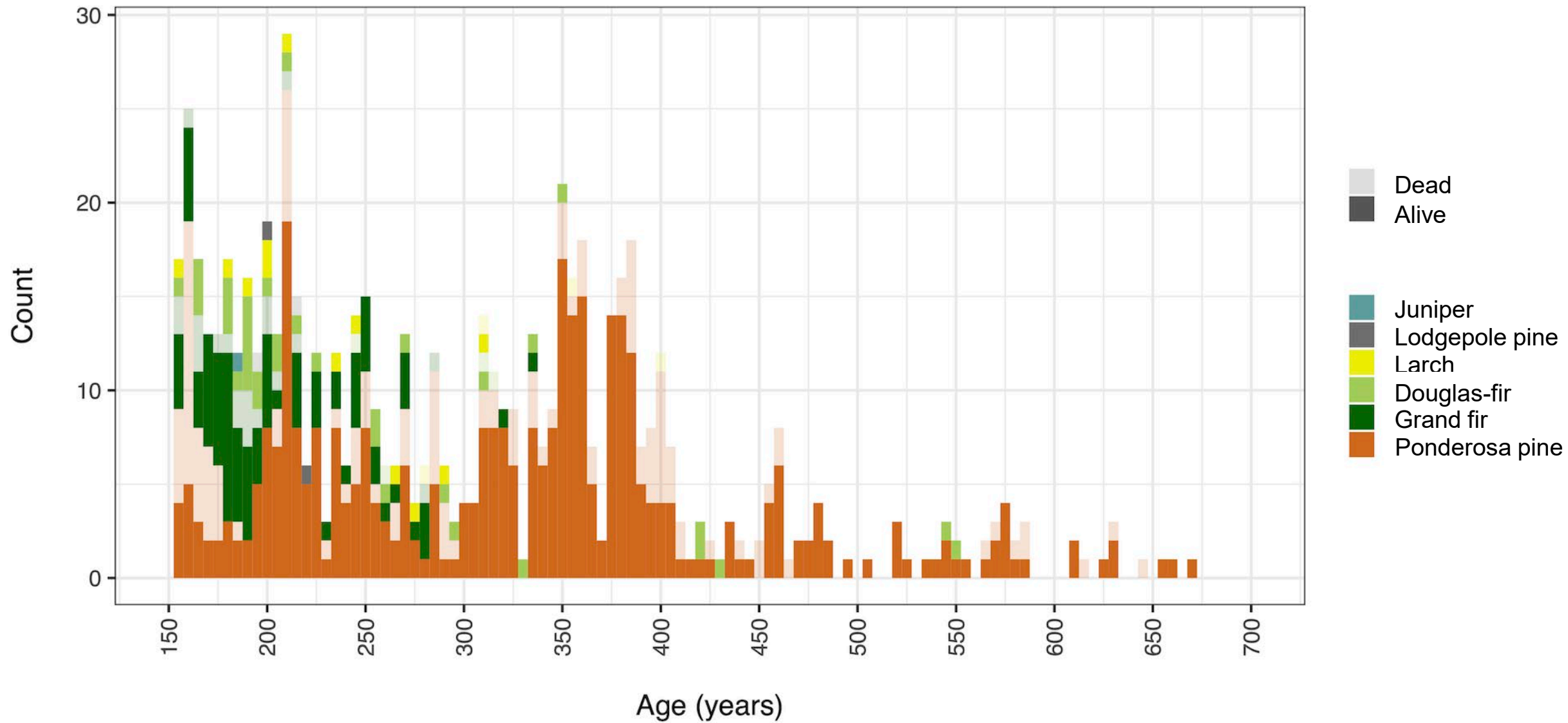


06 130 2

08 077 2







Decadal mortality rate of old-growth trees 24.5%

Annual mortality rate of old-growth trees 2.45%





Other slides

Some slides from Marin Palmer, Forest Service Regional Biometrics Program Manager
marin.palmer@usda.gov

Executive Order 14072: Strengthening the Nation's Forests, Communities, and Local Economies (22 April 2022)

- Section 2(b): Required USDA and DOI to **define, identify, and complete an inventory of old-growth and mature forests on Federal lands**, accounting for regional and ecological variations, as appropriate, and make the inventory publicly available within one year, or by April 22, 2023
- Technical Report: [Mature and Old-Growth Forests: Definition, Identification, and Inventory \(usda.gov\)](#)
- Map included in Climate Risk Viewer: [Forest Service Climate Risk Viewer \(arcgis.com\)](#)

Technical Report

Forest Service and BLM lands combined contain 32.7 +/- 0.4 million acres of old-growth and 80.1 +/- 0.5 million acres of mature forest.



Forest Service
U.S. DEPARTMENT OF AGRICULTURE



April 2023 | FS-1215a

Mature and Old-Growth Forests: Definition, Identification, and Initial Inventory on Lands Managed by the Forest Service and Bureau of Land Management

Fulfillment of Executive Order 14072, Section 2(b)



Old-growth ponderosa pine forest stand on the Fremont-Winema National Forest in Oregon. USDA Forest Service Photo.

Narrative Framework – Old Growth

Old-growth forests are dynamic systems distinguished by old trees and related structural attributes. Old growth encompasses the later stages of stand development that typically differ from earlier stages in a variety of characteristics, which may include tree size, accumulations of large dead woody material, number of canopy layers, species composition, and ecosystem function (U.S. Department of Agriculture, Forest Service 1989).

In addition to their ecological attributes, old-growth forests are distinguished by their ecosystem services and social, cultural, and economic values. Old-growth forests have place-based meanings tied to cultural identity and heritage; local economies and ways of life; traditional and subsistence uses; aesthetic, spiritual, and recreational experiences; and Tribal and Indigenous histories, cultures, and practices. Dialogue with stakeholders and Tribal Nations and integration of local and Indigenous Knowledge with evolving scientific understanding are critical in identifying and stewarding old-growth forests.

Narrative Framework – Mature Forest

Mature forests are delineated ecologically as the stage of forest development immediately before old growth.

Mature forests exhibit structural characteristics that are lacking in earlier stages of forest development and may contain some but not all the structural attributes in old-growth forests. The mature stage of stand development generally begins when a forest stand moves beyond self-thinning, starts to diversify in height and structure, and/or the understory begins to re-initiate. Structural characteristics that mark the transition from an immature to mature forest are unique to each forest type; they may include but are not limited to abundance of large trees, large tree stem diameter, stem diameter diversity, horizontal canopy openings or patchiness, aboveground biomass accumulation, stand height, presence of standing and/or downed boles, and/or vertical canopy layers.

Mature forests vary widely in character with age, geographic location, climate, site productivity, relative sense of awe, characteristic disturbance regime and the values people attribute to or receive from them. Dialogue with stakeholders and Tribal Nations and integration of local and Indigenous Knowledge with evolving scientific understanding are critical in effectively managing mature forests.

Mature and Old Growth Tab: Forest Service Climate Risk Viewer (arccgis.com)

Forest Service Lands Mature and Old-Growth Forest Estimates (v 1.0)

Relationship

↑ Mature (bin)

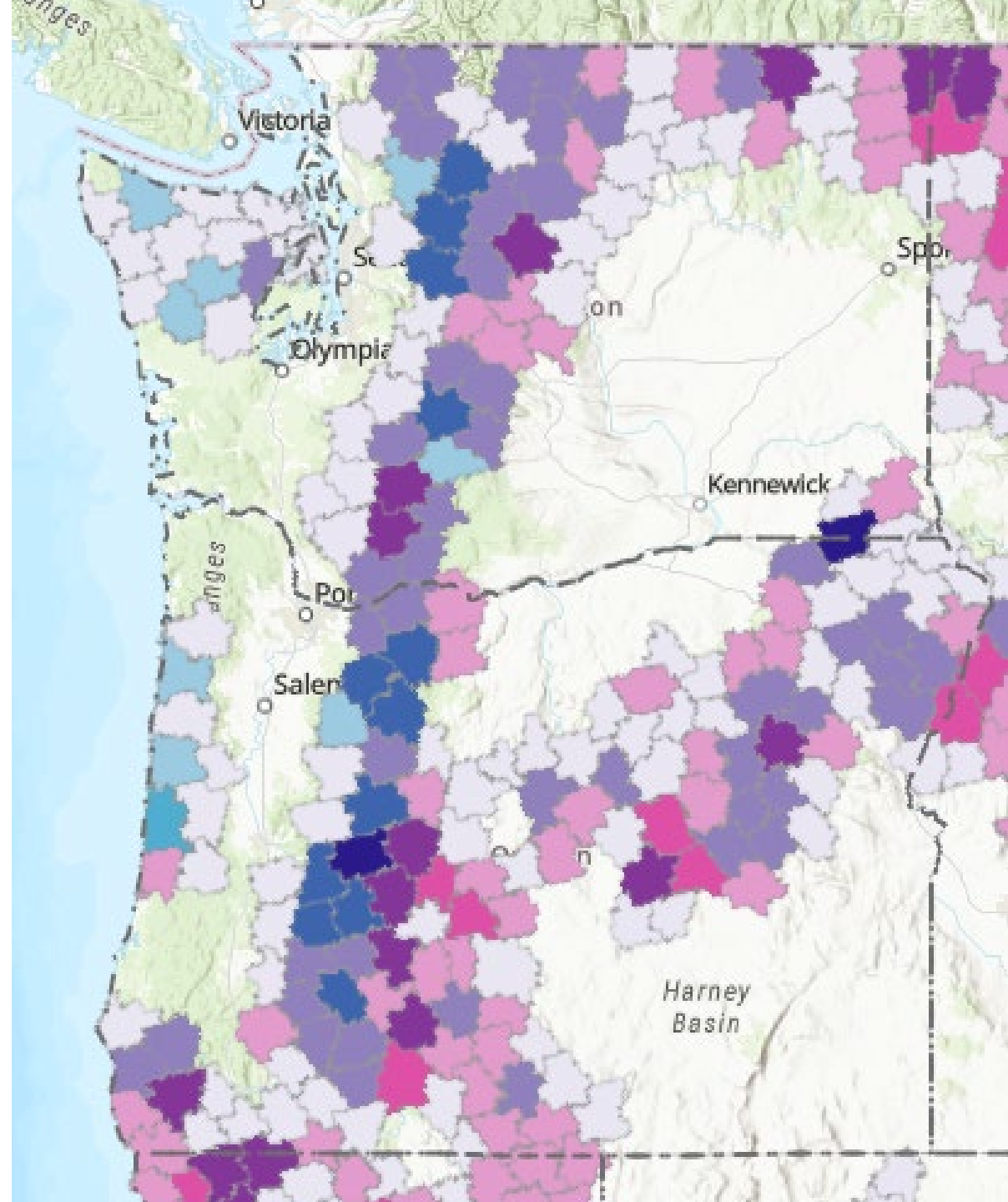
→ Old-Growth (bin)

High Mature -
Low Old-Growth

High Mature -
High Old-Growth

Low Mature -
Low Old-Growth

Low Mature -
High Old-Growth



Public Website

<https://www.fs.usda.gov/managing-land/old-growth-forests>