

Geography 317

Real Trees Have Curves: Dendrochronology at Fairfield Osborn Preserve



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Introduction

Fairfield Osborn Preserve

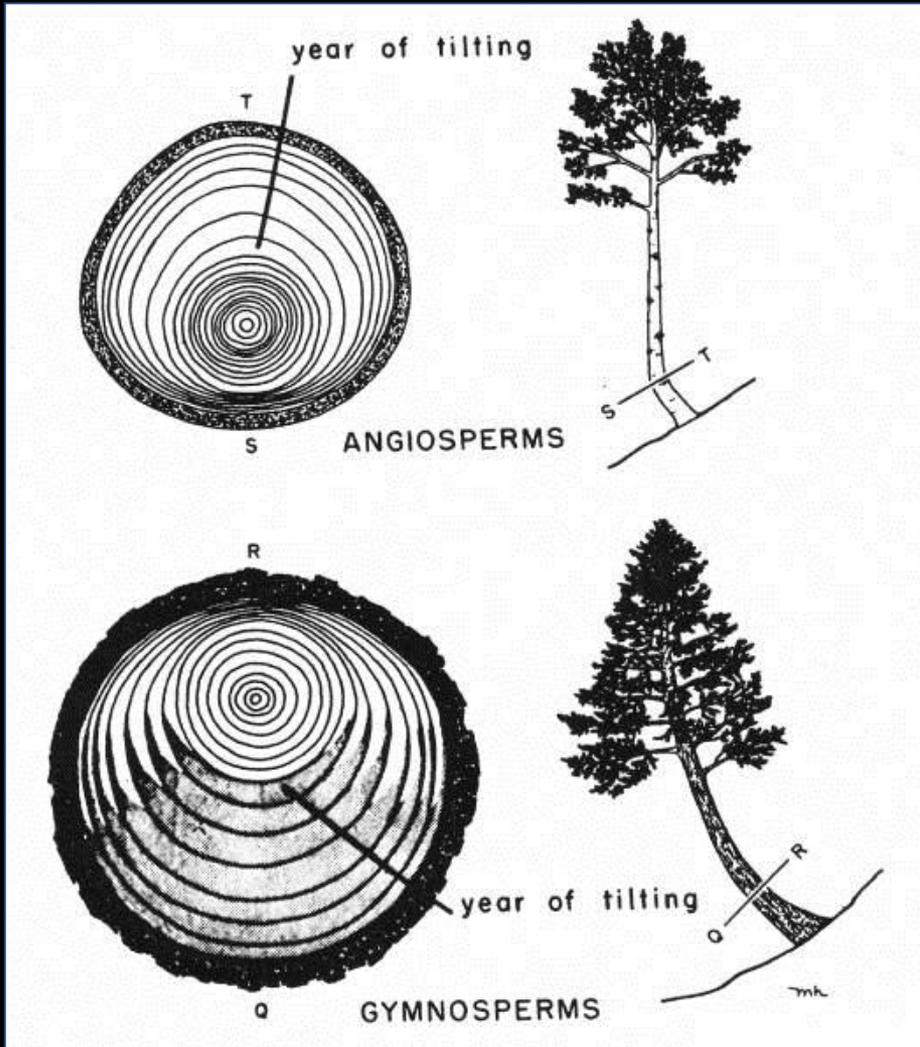
- Educational Resource
- Community Partner since 1997

Service Learning Class:

- Hands-on learning while providing a service to FOP

Dendro Project

- Stand age
- Fire history
- Age of mass movements



Dendrochronology Field Methods



- Increment borer
 - Upslope and downslope cores retrieved



- Tree types
 - Bay
 - Oak

Field Methods



- Aspect
- Slope
- Tree Height
- Crown
- Diameter at Breast Height (DBH)
- GPS coordinates



Dendrochronology Lab Methods

- Tree core samples mounted
- Cores and cross-sections sanded to final abrasive medium of 400 grit

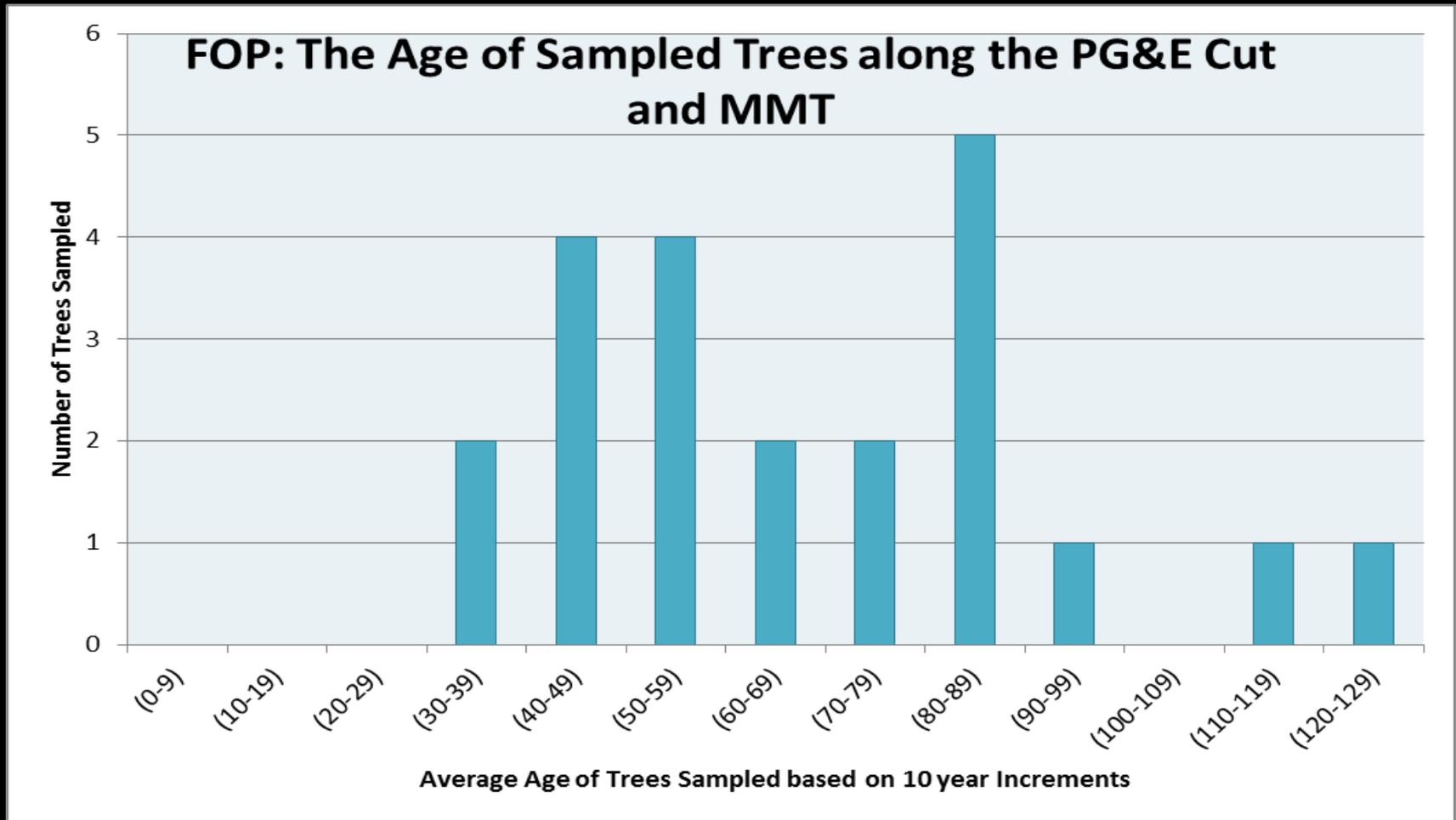


Lab Methods, cont.

- Samples examined under microscope
 - Approximate age
 - Date of eccentricities indicative to mass wasting and fire histories



Dendrochronology Results



Dendrochronology Results (cont.)

Calendar Years	Number of Eccentricities in Decade	Percentage of Mass Movement
1950-1959	3	12.5%
1960-1969	3	12.5%
1970-1979	4	16.6%
1980-1989	1	4.2%
1990-1999	1	4.2%
2000-2009	0	0%
2010-Present	0	0%
Inconclusive	12	50%

Summary/Conclusion



- Tree ages from the two study areas ranged from 37 to 125 years (1888-1976)
 - PG&E 38-87
 - MMT 37-125
- No fire events detected in this time frame
 - One tree (MMT) showed evidence of internal scarring, suggesting possible fire or mechanical damage from an unknown source
- Ring eccentricity suggests most active period of mass movement occurred from 1953-1976

Summary/Conclusion

- While our results for tree age are helpful in forming a rough estimate, more data needs to be collected.
 - Many more trees on each site need to be sampled
 - Finer sanding up to 1000 grit to better see tree rings
 - More locations to get a more broad record

