

Wind Mountain Talus Slope & Geological History of Skamania County, WA

Adrian A. Jimenez — Portland Community College, Southeast Campus



Overview

Questions

1

What is the age of Wind Mountain and how does it fit into the geologic timeline of the western Columbia River Gorge?

2

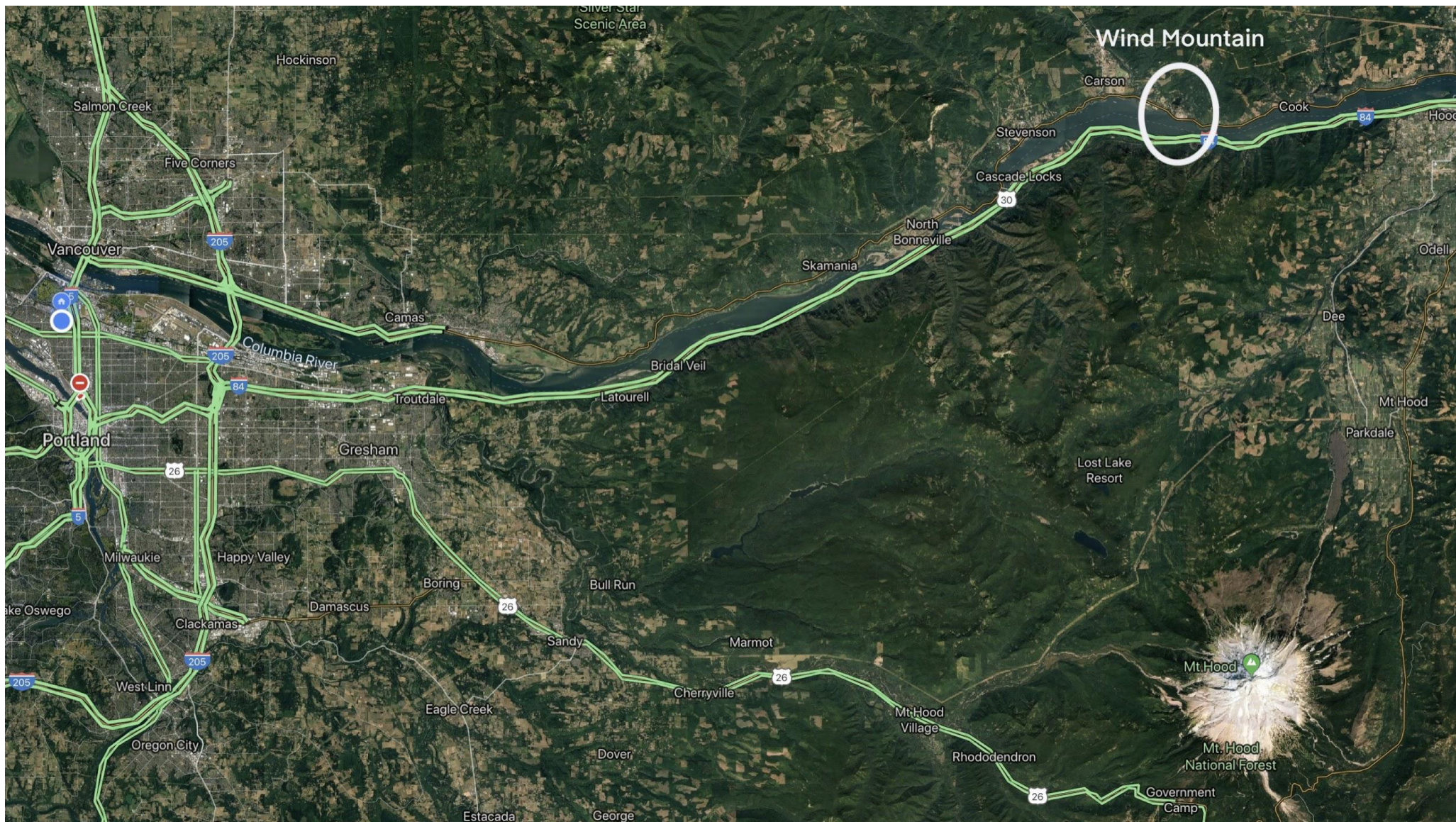
What is the age of the Wind Mountain talus slope, with respect to geologic events in the Columbia River Gorge?

3

What are the forces that may have generated the talus slope on Wind Mountain?

4

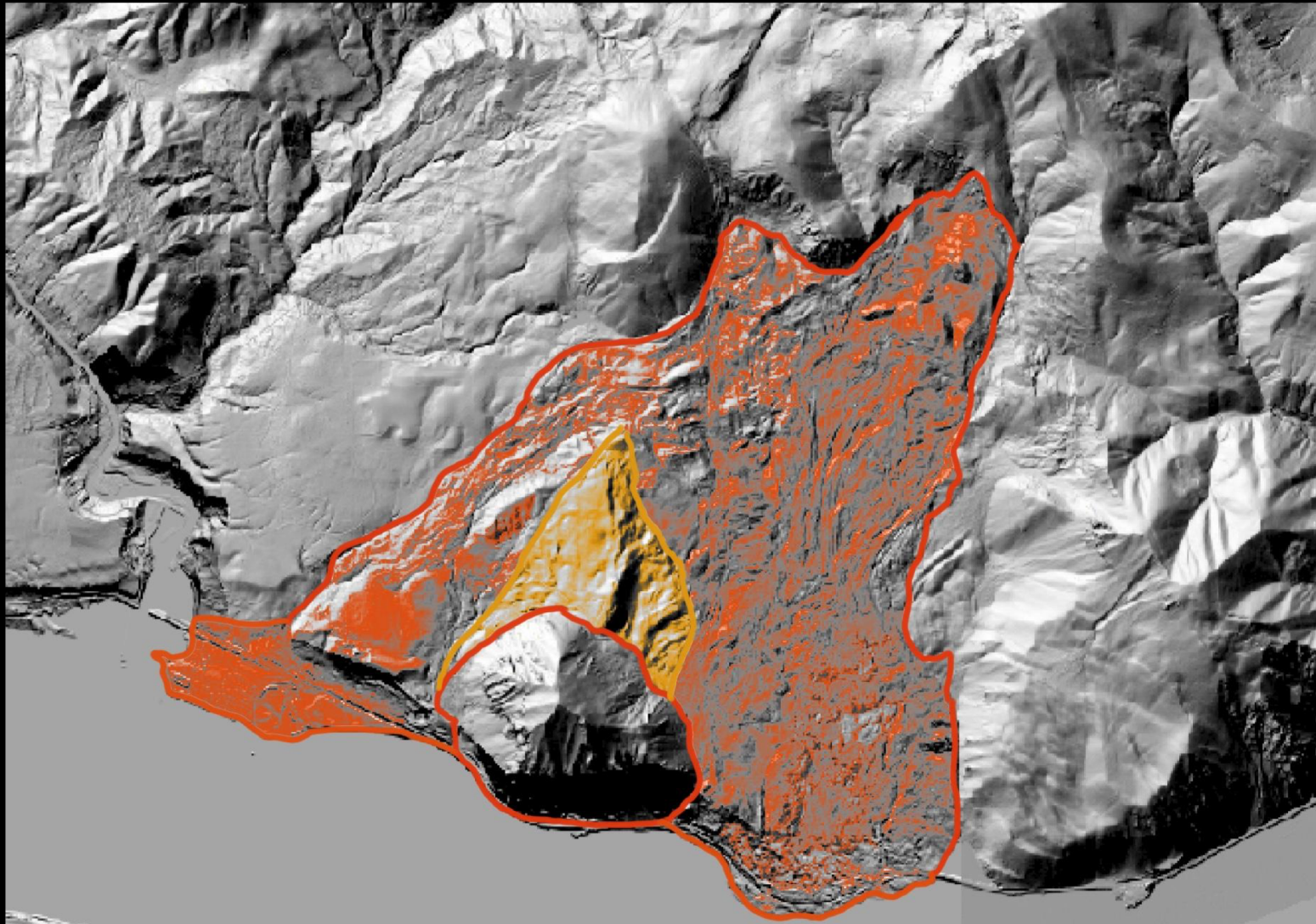
What is the relation between Wind Mountain and nearby features in the Columbia River Gorge?













Hypothesis

- Wind Mountain's talus slope was generated prior to the Missoula Floods, and the dark/light material which comprises the slope have differing composition. This hypothesis has been falsified.

Methodology

3 day (~30 hrs)
trips to the study
site, to collect
samples and
familiarize myself
with the region.

Review of
published
research from
other geologists
familiar with the
region (~100 hrs)

Analysis of
samples to draw
correlation
between Wind
Mountain and
related features in
the Gorge (~10
hours)

Creation of a
timeline of the
significant
geologic events
of the region
(~60 hours)



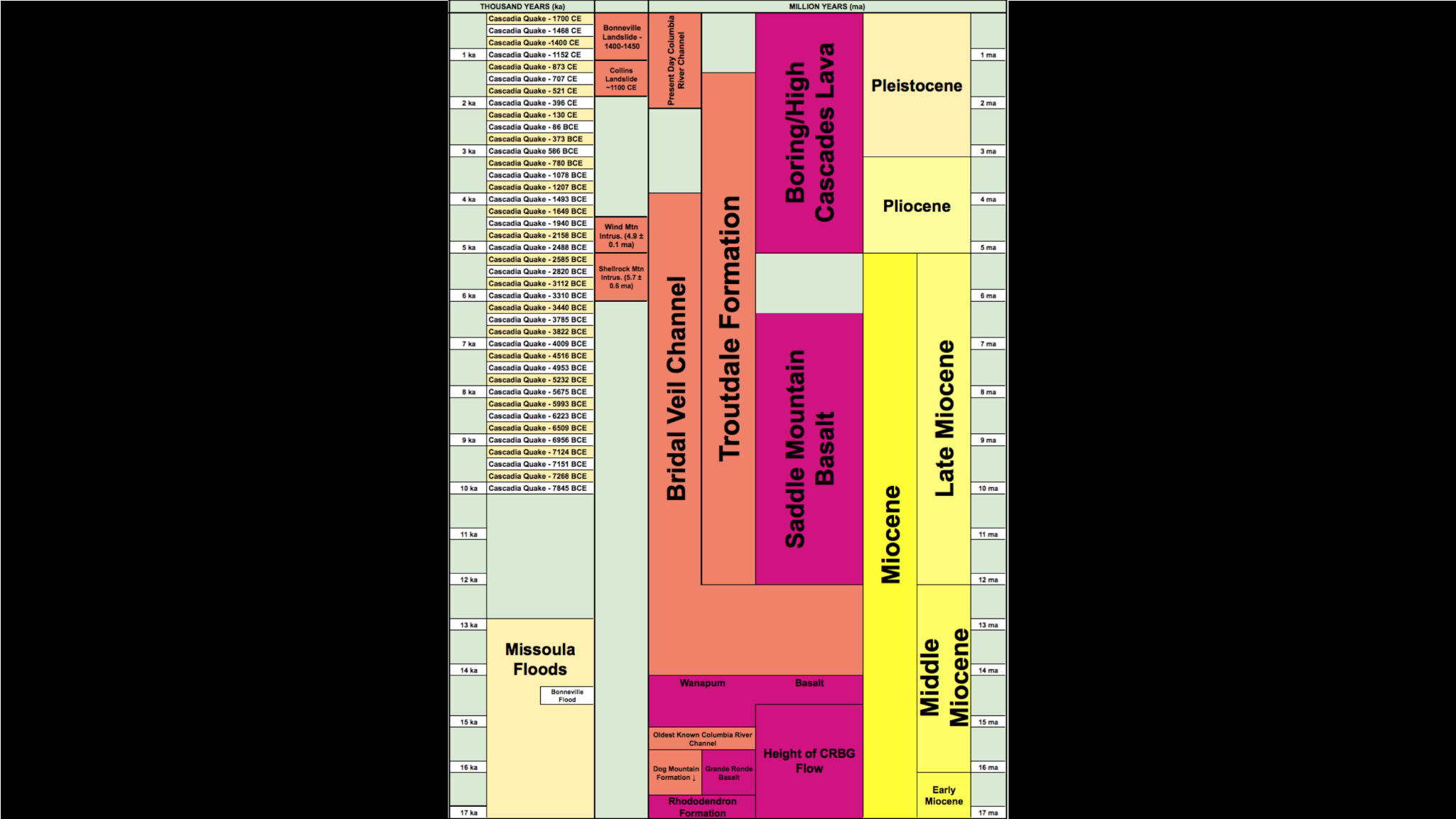
Discussion & Conclusions



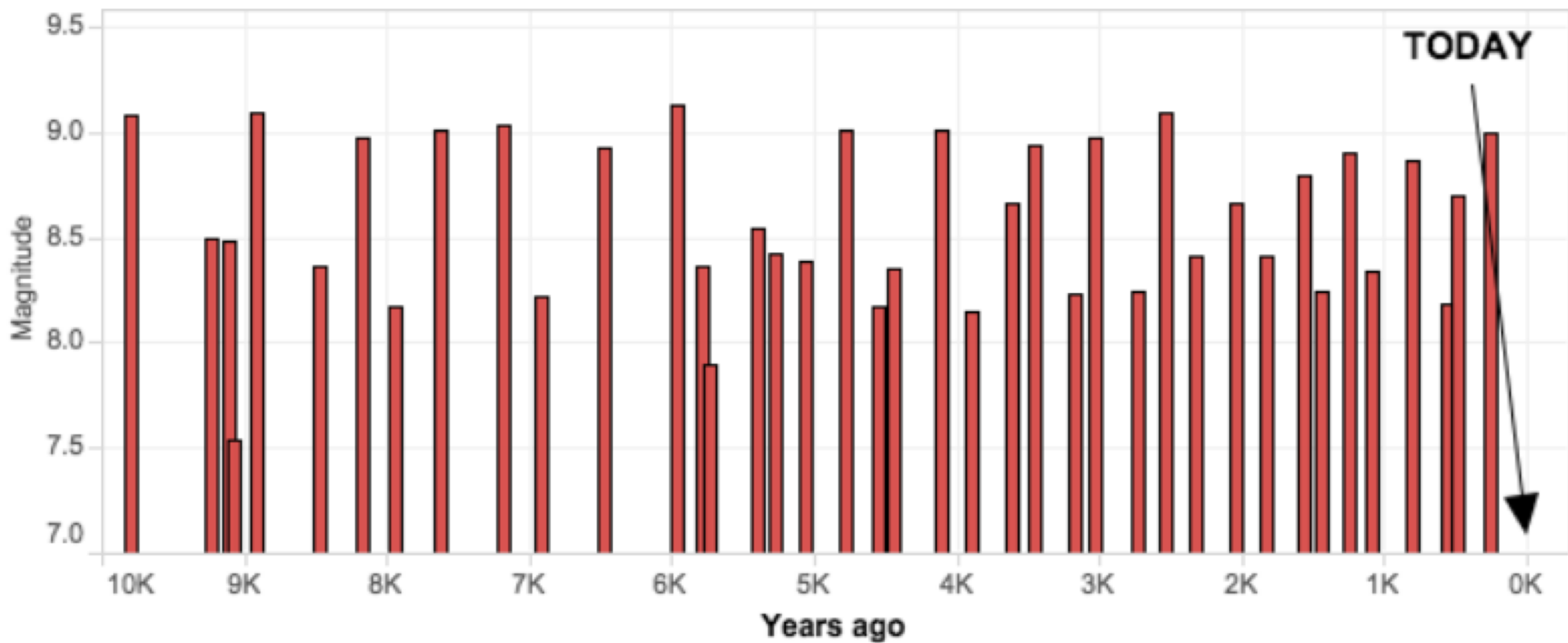
Age of Wind Mountain & Talus Slope; Driving Forces

- Wind Mountain $\sim 4.9 \pm 0.1$ ma (Walsh)
- Talus slope formed over last 13 ka, after the last Missoula Flood
 - Frost wedging in surfaces fractured by floods
 - Over-steepening by Missoula Floods and Bonneville Landslide lake
 - Megathrust CSZ earthquakes



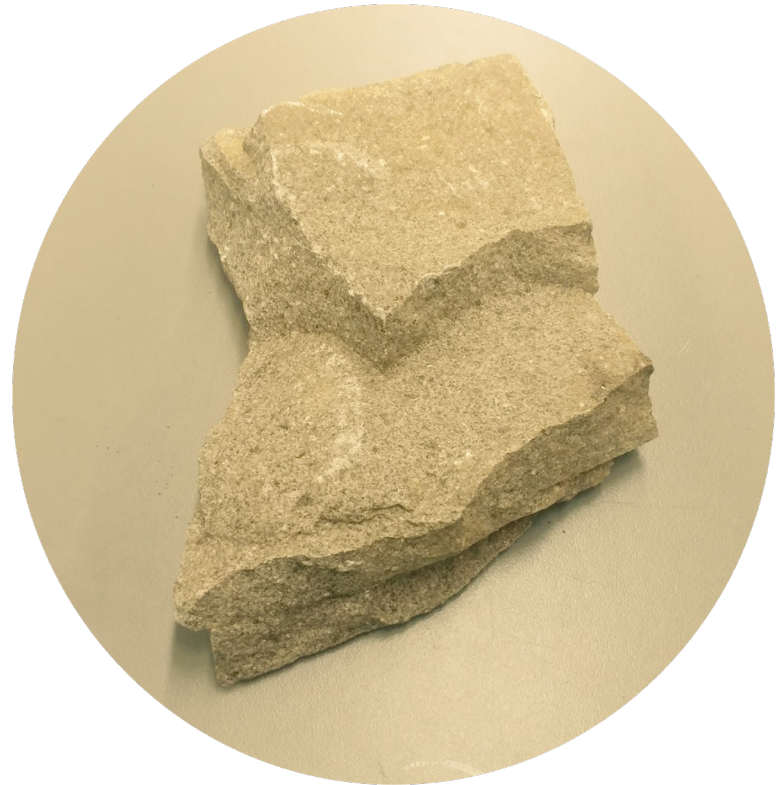


Average quake is every 245 years





Granodiorite Sample from
Shellrock Mountain.



Granodiorite samples from
Wind Mountain, possibly
related to Shellrock
Mountain.



Basalt Samples from Collins
Landslide Stockpile.



Basalt Sample from Dog
Mountain, likely unrelated
to Collins Landslide
material.



Special Thanks to:

- Marjan Rotting, for mentoring me through this project
 - Eriks Puris, for assisting with sample analysis and project scope
 - Patrick Pringle, for providing valuable insight into the geologic events of the region as well as research suggestions
 - Julia Betts, for support throughout project
 - Gateway to College, for academic support during this project
 - Oregon NASA Space Grant Consortium, for funding the project
-
-