

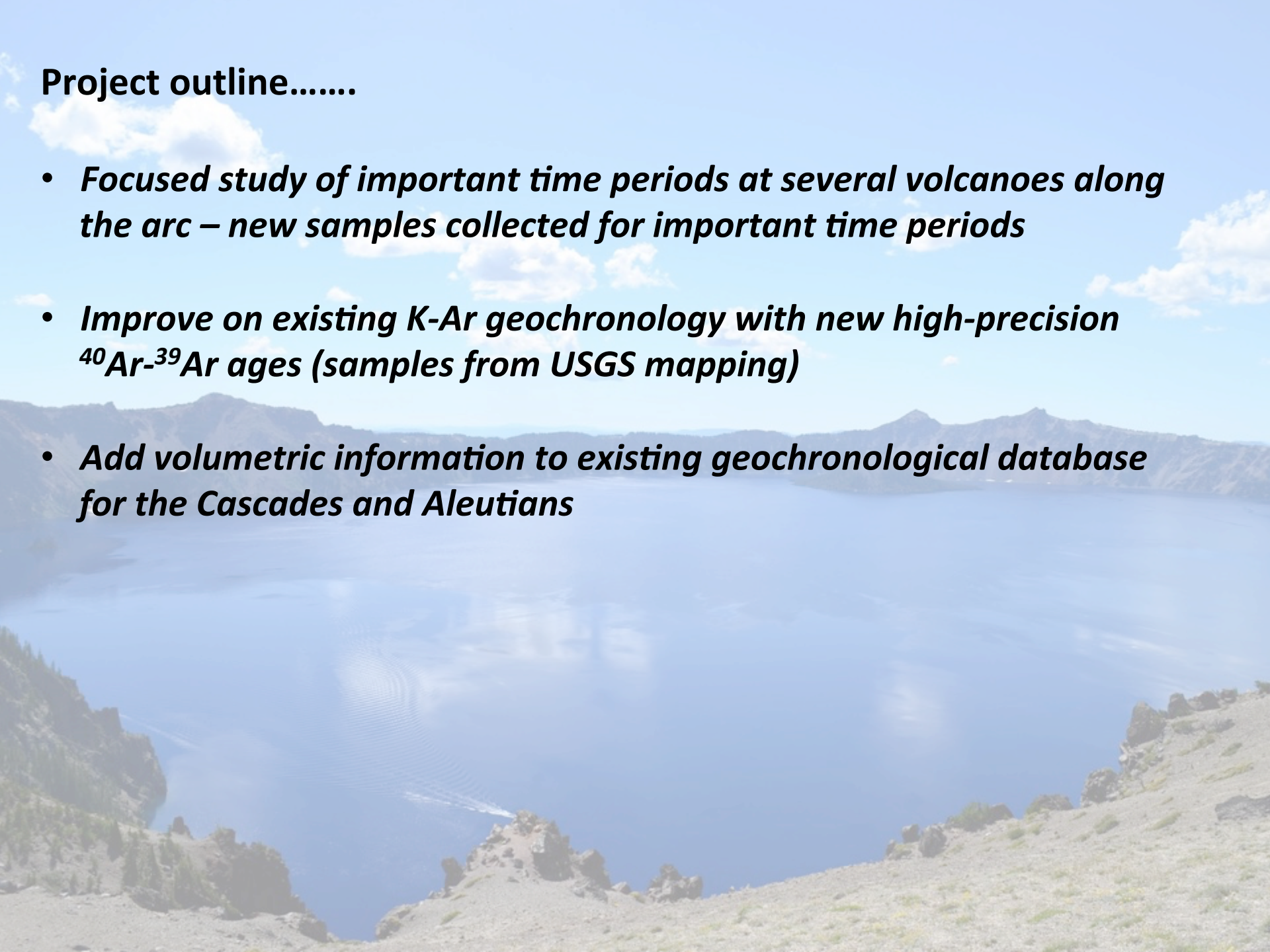
Investigating eruption rates in the Cascades Arc

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Willie Scott, Charlie Langmuir*



Project outline.....

- ***Focused study of important time periods at several volcanoes along the arc – new samples collected for important time periods***
- ***Improve on existing K-Ar geochronology with new high-precision ^{40}Ar - ^{39}Ar ages (samples from USGS mapping)***
- ***Add volumetric information to existing geochronological database for the Cascades and Aleutians***



Field sites for new high-resolution Ar-Ar geochronology

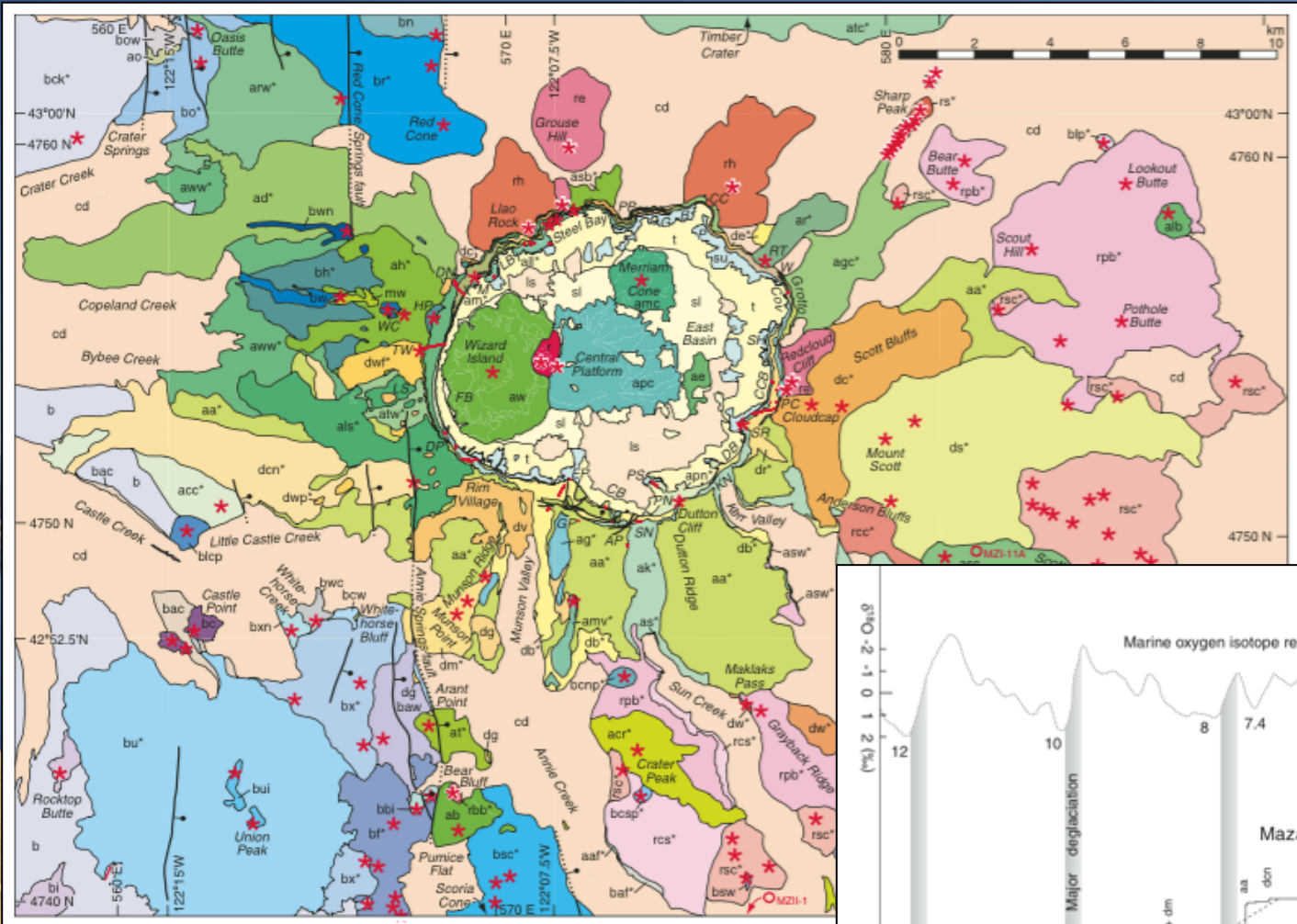


Focus on volcanoes with least fragmental deposits (i.e. more effusive)

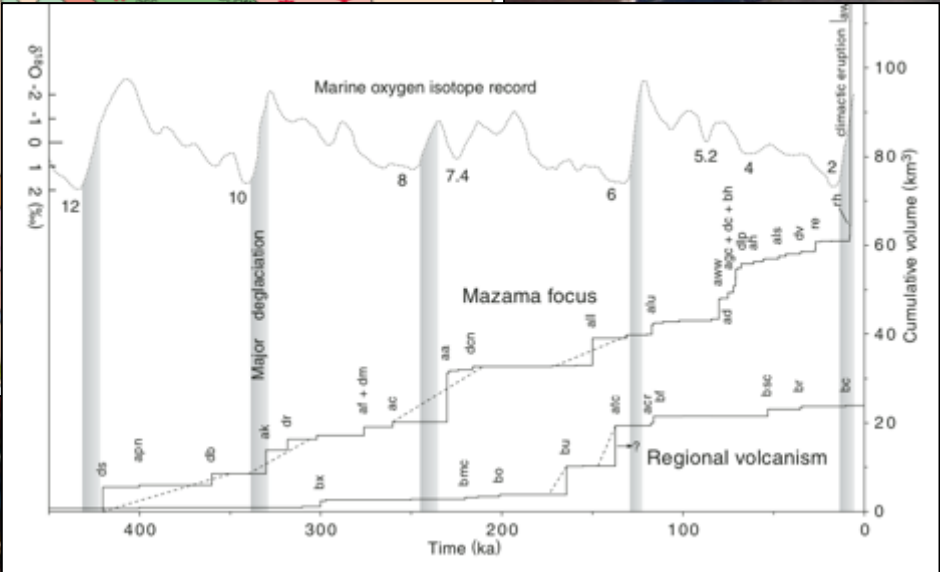
New Ar-Ar and geochemical data to be obtained for Adams, Hood and Crater Lake from a combination of new and existing K-Ar samples

Good Ar-Ar data and mapping already exists for Rainer and Shasta (Calvert and Sisson)

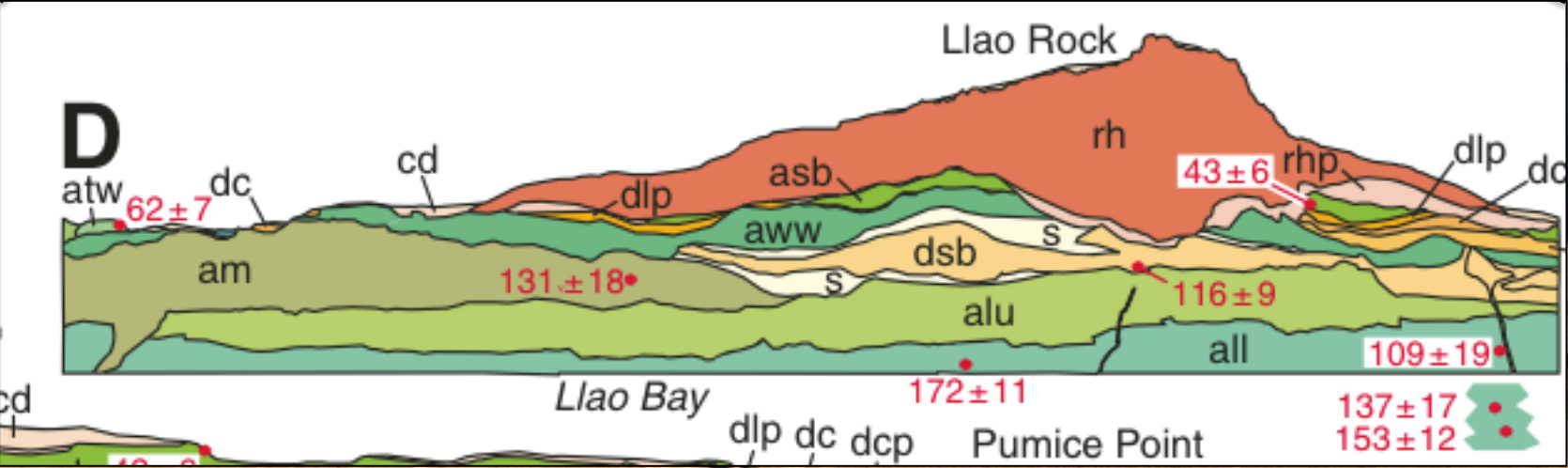
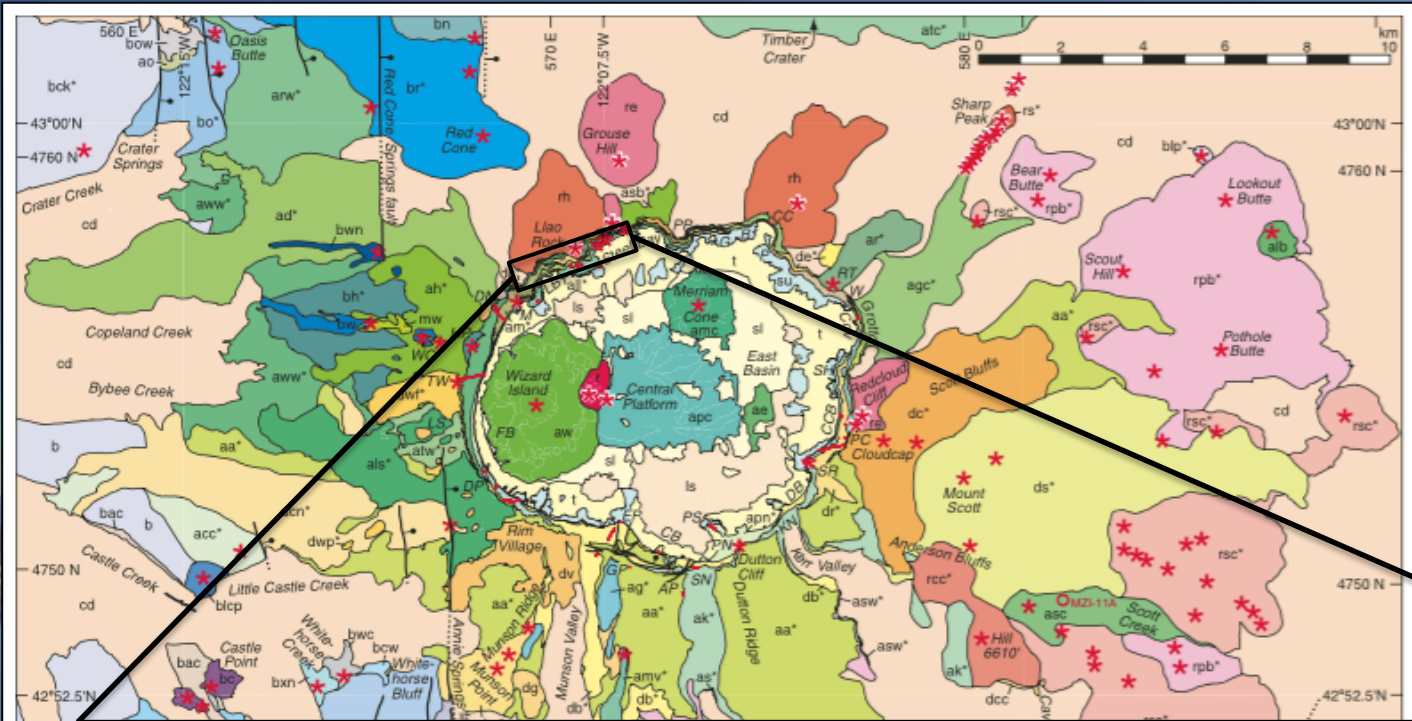
Field work summer 2014 – Crater Lake and Mt. Hood



Bacon and Lanphere, 2006



Field work summer 2014 – Crater Lake and Mt. Hood

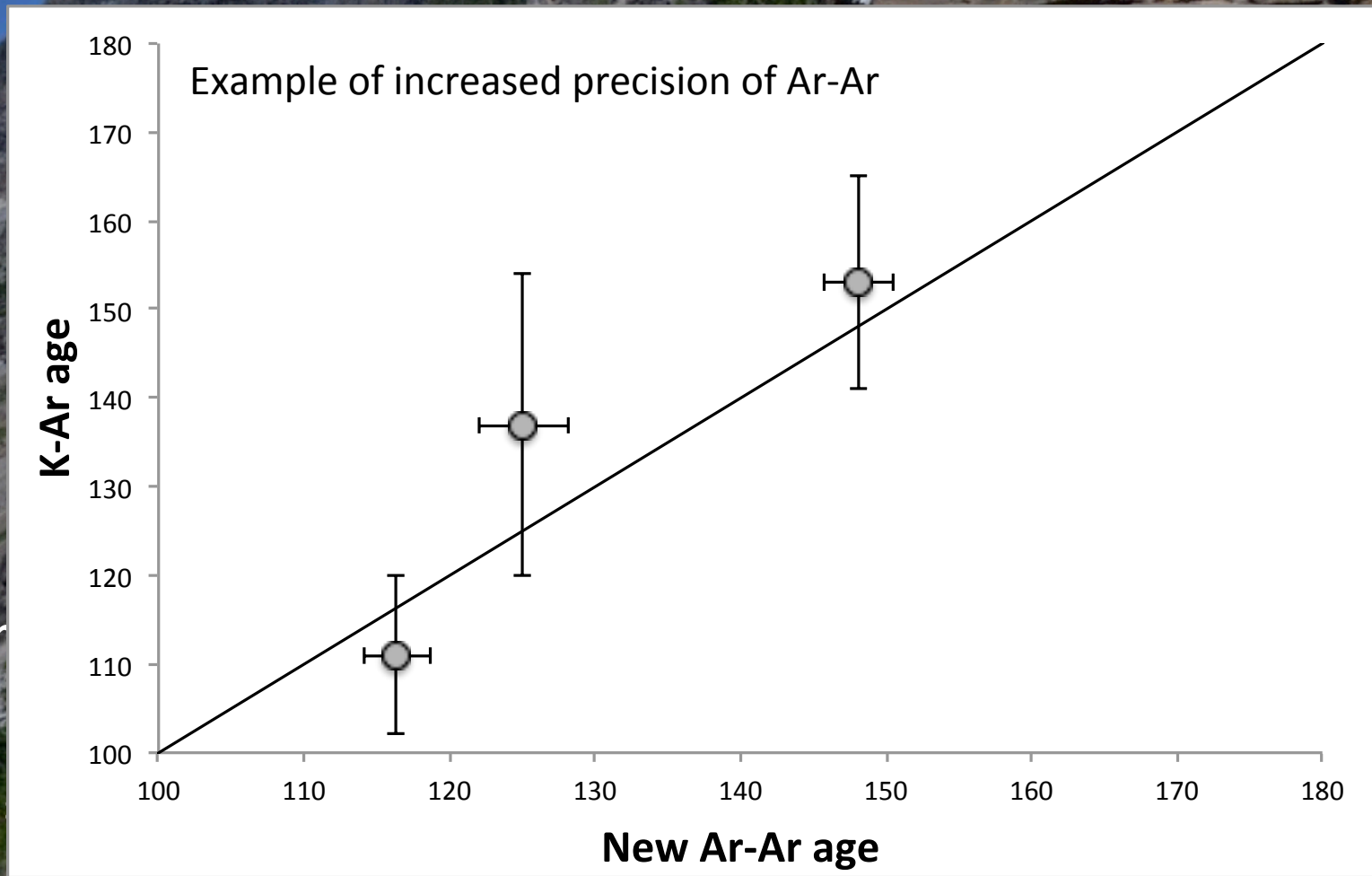


Caldera walls accessed from the lake with assistance from Parks Dept.

Sampling of multiple flows within mapped units

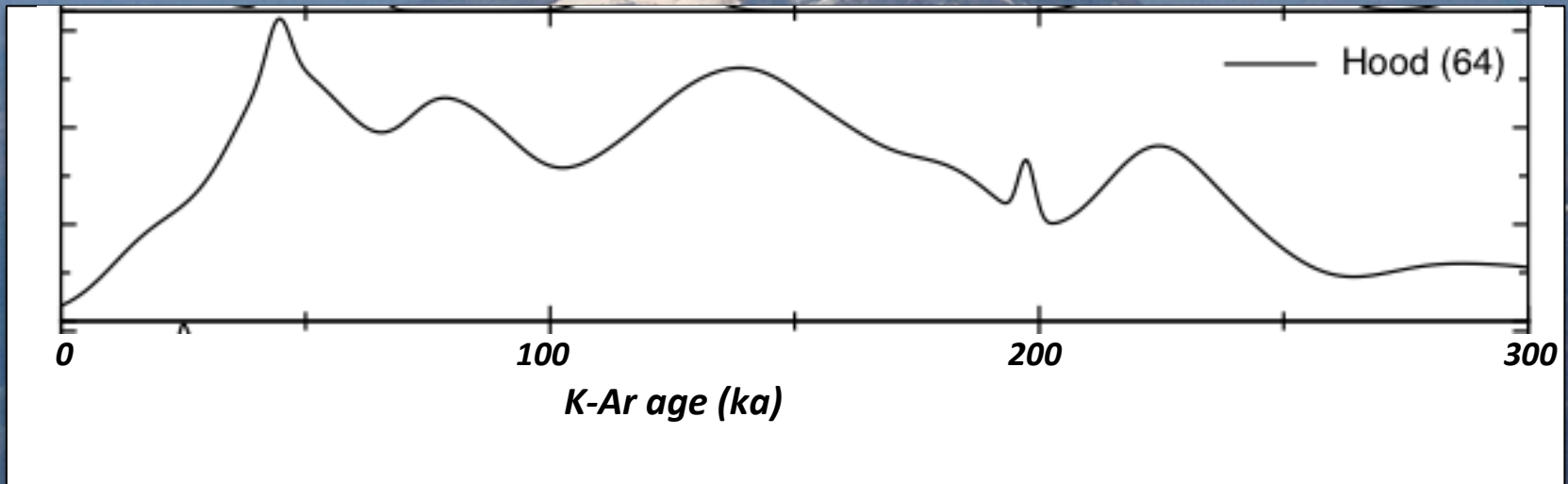


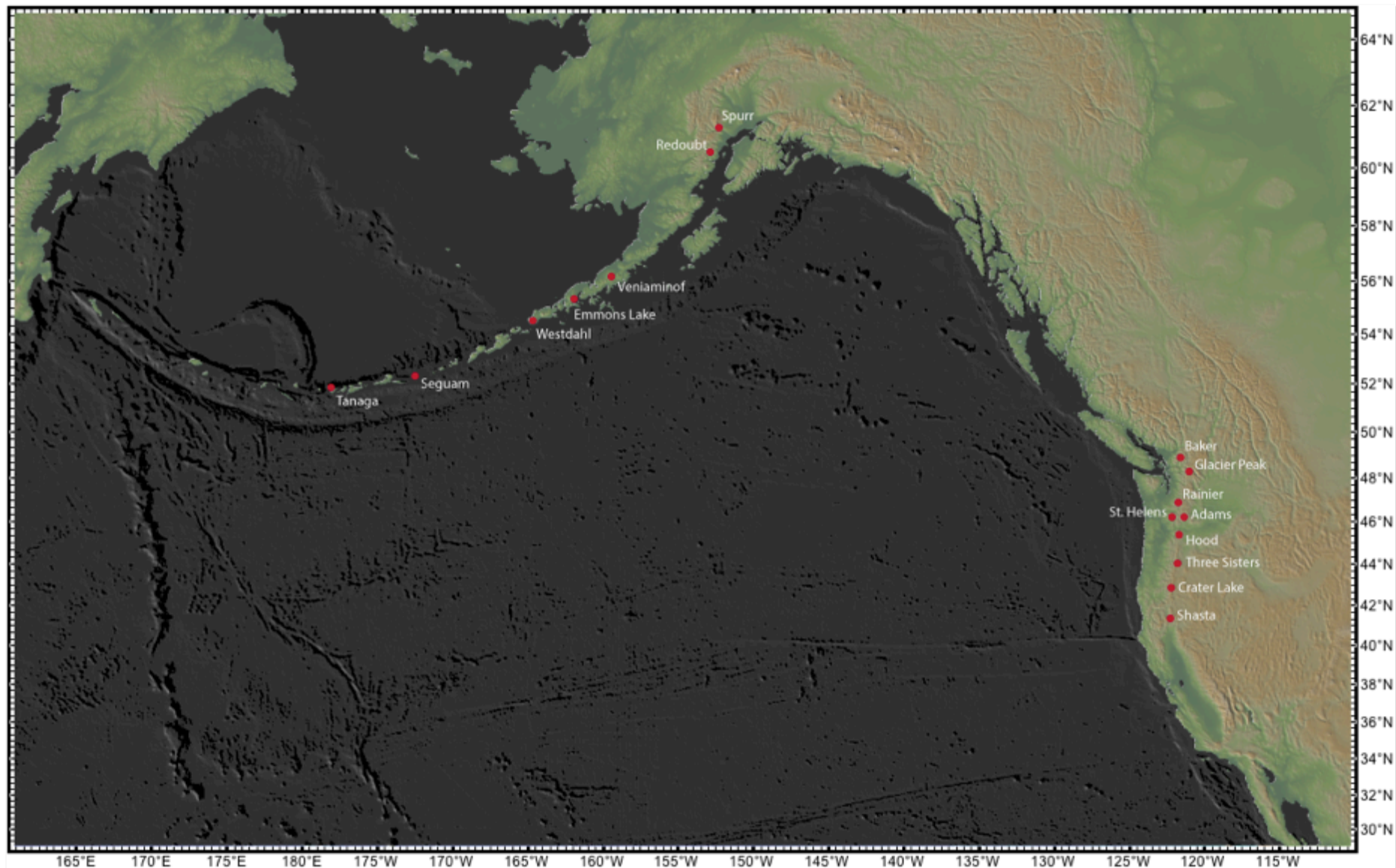
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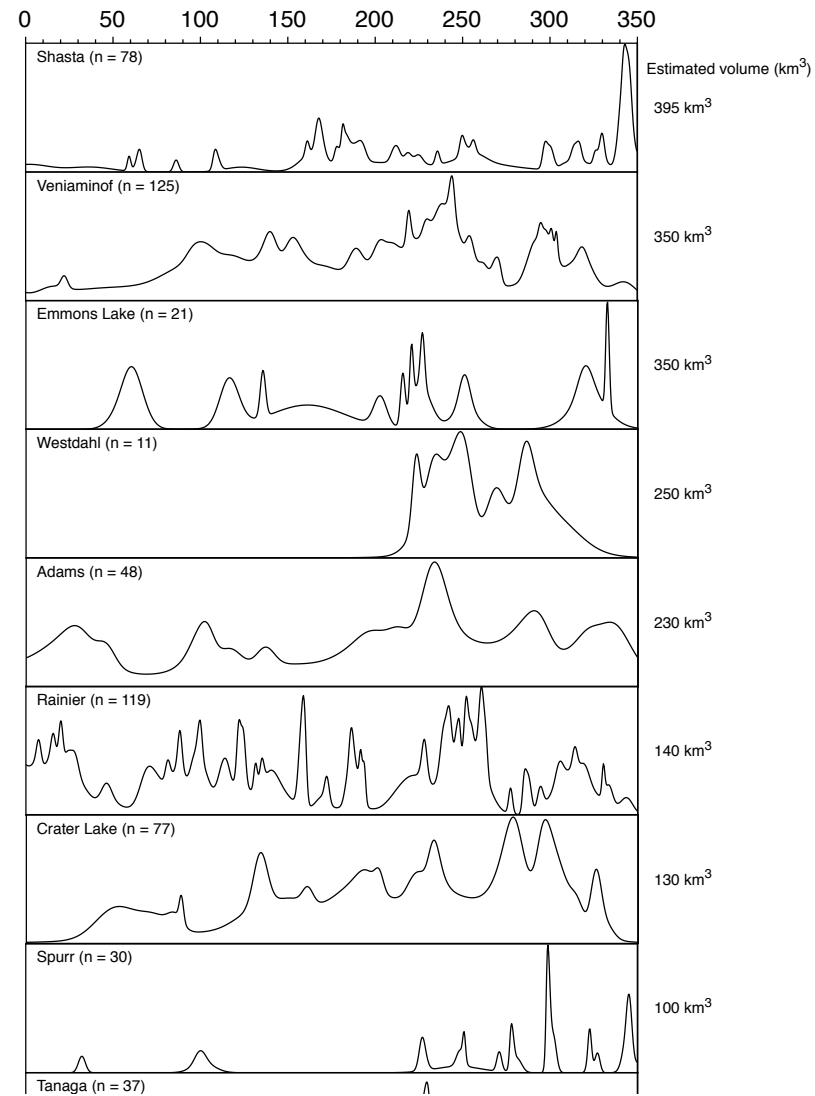
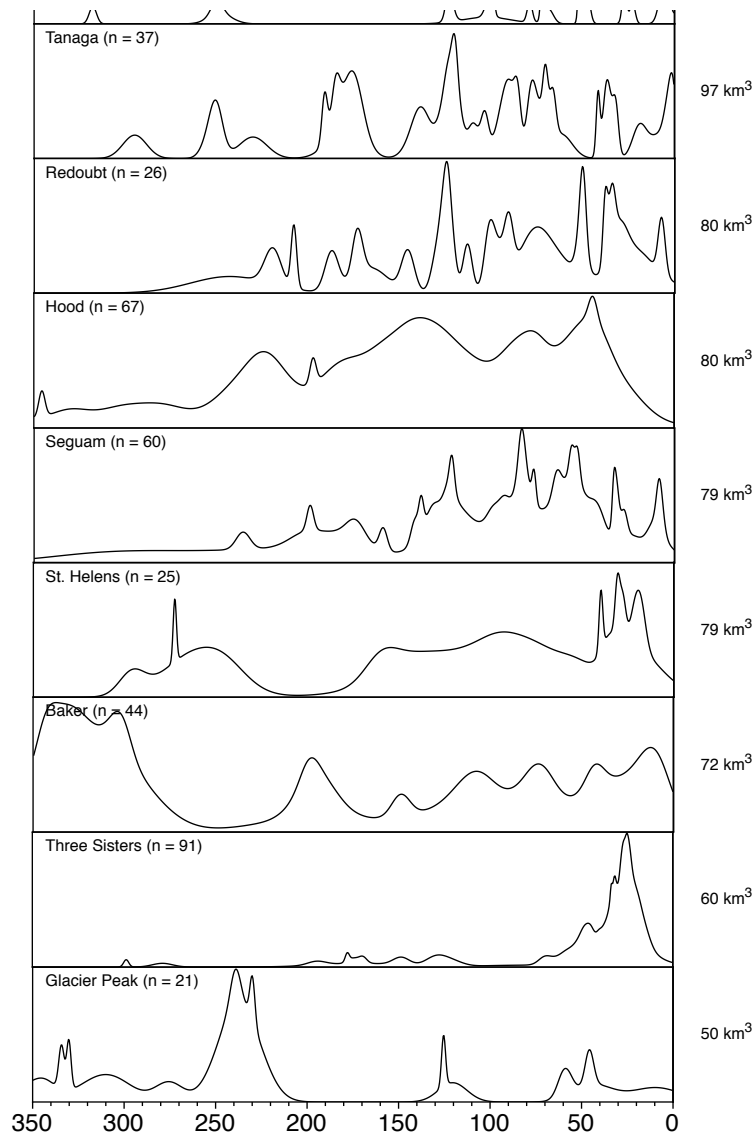


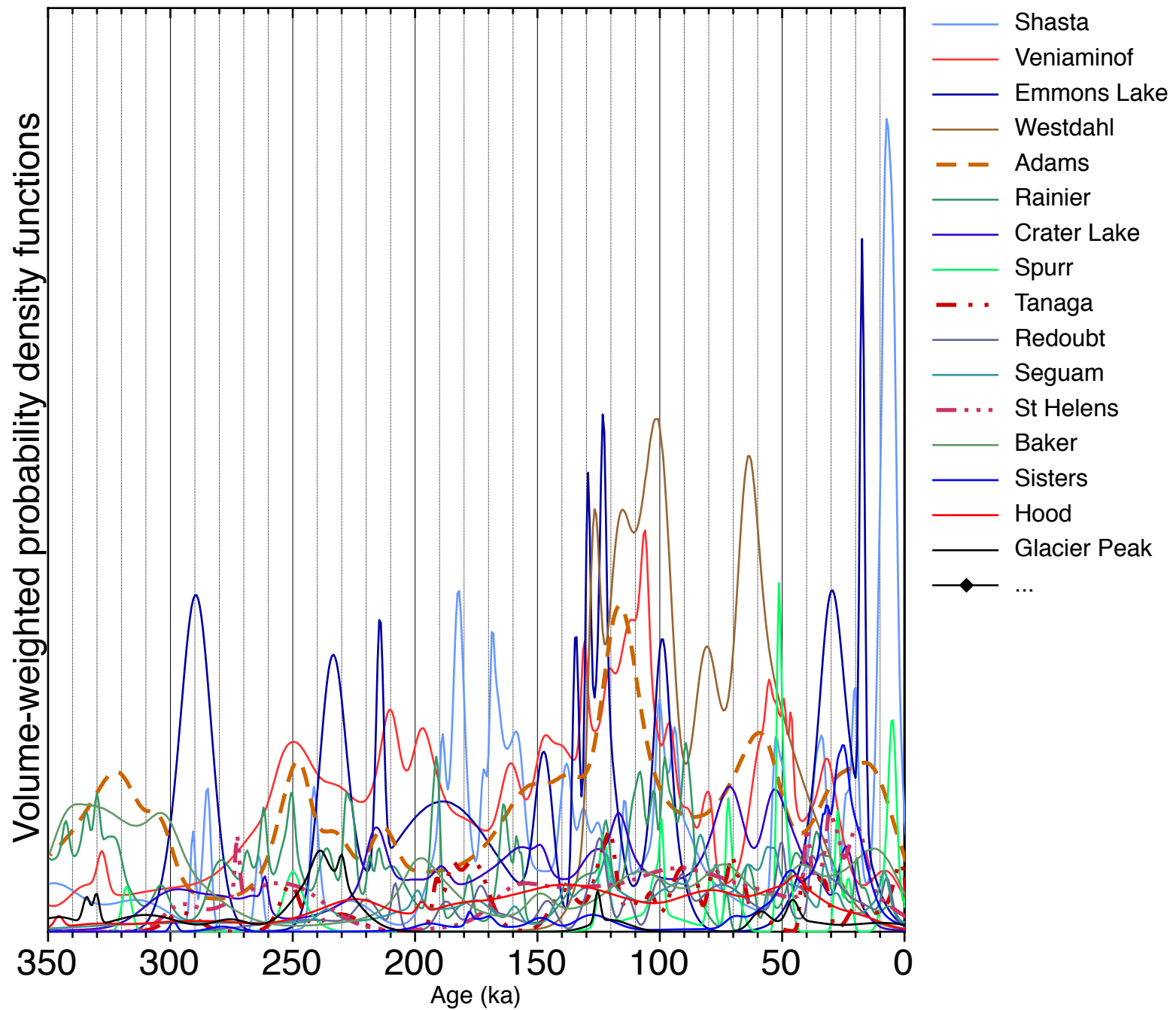
Mt Hood

- *Small volcano ($\sim 50 \text{ km}^3$), several ice contact features, large volume lava flows*
- *Mapping in progress by Willie Scott*
- *Current K-Ar data lacks precision to identify and clear variations in eruptive output that may be linked to climate*
- *New Ar-Ar and geochemical analysis of ~ 30 samples*









Eruptive frequency of Alaska/Aleutian and Cascade Volcanoes

