

## Oregon Society of Soil Scientists Summer Tour 2023

A field examination of multiscale determinants of soil properties in the Ochoco National Forest

Ochoco National Forest, Crystal Springs Camp, NF-2210

*Over the course of the two-day field tour, we'll examine ~6-8 soil pits distributed within two distinct geomorphic provinces of the Forest. In each province, the John Day/Clarno (JDC) and the Basaltic Scab-Stringer terrain (BSS) respectively, we will be investigating the interplay between soil forming processes, their multi-scale nature, and the mapping approaches to integrating these processes to improve map accuracy and utility. Particular focus will be placed on how these factors come together to influence site productivity, planning and implementation of management actions, and the broader ecological context of ashy soils in the dry, semi-arid forests of central Oregon.*

**THESE TIMES ARE TENTATIVE AND WILL BE REVISED AS WE GET CLOSER. A FINAL AGENDA WILL GO OUT TO ALL REGISTRANTS IN EARLY SEPTEMBER.**

### **Friday Sept. 8th**

4:00 p.m. onward – arrive at Crystal Springs Camp, check in with OSSS board members and secure camping/sleeping

6:00 p.m. – Dinner is served (provided). Discuss logistics and agenda for Saturday.

### **Saturday Sept.9th**

6:30-7:15 a.m. – Breakfast and Introductions

7:30 a.m. – Depart Crystal Springs Camp for Slide Mountain

7:30-8:30 a.m. – Arrive at Slide Mountain for landscape overview of the Scab-Stringer terrain and the collapsed mountains of the John Day/Clarno formations. Examine first soil pit and discuss the spatial distribution and ecohydrologic/site productivity influence of mazama ash in the forest.

8:30- 11:00 a.m. – Examine first soil pit in an ABGR/CARU/CAGE PAG (perhaps a catena?) and discuss the spatial distribution and ecohydrologic/site productivity influence of mazama ash in the forest.

11:00 a.m. -11:30 p.m. – Drive to Pisgah Fen/Meadows

11:30 – 12:30 p.m. – Lunch and discussion of the structural geology and its influence on the hydrology of the Pisgah meadows area and the spring complex supporting the Columbia Spotted Frog. Examine soil pits in the high elevation, udic/cryic zone near Pisgah Lookout. Soils will compare and contrast ashy soils (sandy loams) versus soils heavily influenced by post-mazama aeolian dust deposition. (2 soil pits)

2:30 – 3:00 p.m. – Travel to Big Summit Prairie/Allen Creek Horse Camp.

3:00 - 4:30 p.m. – Examine and discuss the xeric/mesic-frigid soils of the Prairie. Primary focus is to compare and contrast two soil pits, one in an ashy stringer and one in the basaltic scab. Discussion and emphasis being placed on the geologic controls on drainage spacing and the spatial heterogeneity of ash distribution in the scab-stringer.

4:45 – 5:30 – Return to Crystal Creek Camp

6:00 p.m. – Dinner is served (provided).

### **Sunday Sept. 10th**

6:30-8 a.m. - Breakfast; attendees prepare sack lunches for the field

8:30 a.m. – Depart Crystal Springs Camp

9:00-10:30 a.m. – Introduction and overview of mass wasting processes in areas underlain by the clayey (bentonitic) John Day/Clarno formation. Discuss the role of lidar and landscape analysis in inferring slope stability and in mapping/anticipating soil variability. Contrast the hydrology of the ash-mantled clayey soils of the JDC versus those of the stringers/andisols observed on Saturday.

10:30 - 11:30 - Soil pit examination, and discussion of strongly contrasting particle size classes (ashy over clayey), their classification, and the management impacts. Discuss the striking differences between the shallow soils of the basaltic scab-stringer terrain and their management versus the very deep, though clayey soils of the JDC.

11:30 a.m. -12:00 p.m. – Drive to final stop and lunch (2210 rd)

1:00 – 2:30 p.m. – Examine and contrast two soil pits in a large earthflow complex and the influence of subsurface features on hydrology and site productivity. Discuss mapping concepts for large mass wasting features and the use and management implications of these complex landforms.

2:30 – 3:30 p.m. – Travel back to Crystal Creek Camp, attendees Depart