NADP Field Trip

Critical Zone Connections: From Sky to Soil to Streams in the Boulder Creek Watershed

November 8, 2019 • Boulder, Colorado

This half-day field trip (8:30 AM - 12:30 PM) will visit the lower montane site of the Boulder Creek Critical Zone Observatory (BcCZO) and will be led by experts from the U.S. Geological Survey and the University of Colorado-Boulder.

Part of the National Science Foundation-funded CZO Network, BcCZO investigates architecture and function of Earth's near-surface environment, and assesses interactions among air, water, biology, and soil. The site (elevation 2000 m) is located within Betasso Preserve, an open space park managed by Boulder County, and offers a unique perspective on the urban-montane transition and the steep elevation gradient that characterizes the Colorado Front Range.

We will tour the BcCZO monitoring infrastructure at Betasso, discussing past and current efforts to characterize connections among atmospheric deposition, wildfire, soil development, water quality and flood generation, groundwater, and critical zone architecture.

We will visit the Betasso meteorological station and National Atmospheric Deposition Program (NADP) site, and will learn about BcCZO research quantifying atmospheric dust and reactive nitrogen deposition along the Colorado Front Range elevation gradient.

We will view a soil profile and discuss the varying ability of soils within the Boulder Creek watershed to process and retain atmospheric deposition. We will hear about the BcCZO's efforts to characterize groundwater dynamics and subsurface critical zone architecture using drilling and geophysical techniques.

Finally, we will discuss how wildfire alters the critical zone, leads to increased erosion, and impacts our water supplies.

Field Trip Cost: $40.00

Registration: http://nadp.slh.wisc.edu/nadp2019/

National Atmospheric Deposition Program