
38-9 - PLANT COMMUNITY AND CLIMATIC RESPONSE TO MID-MIOCENE ENVIRONMENTAL CHANGE IN THE PACIFIC NORTHWEST (USA) WITHIN A REFINED TEMPORAL FRAMEWORK



Sunday, October 10, 2021



3:45 PM - 4:00 PM



Oregon Convention Center - E141/E142 (Hybrid Room)

Abstract

The US Pacific Northwest (PNW), including Washington, Oregon, and Idaho, hosts an extensive suite of Oligocene–Miocene fossil plant sites that have the potential to showcase terrestrial vegetation and climate response to several pronounced environmental perturbations. These include the Mid-Miocene Climatic Optimum (MMCO; ca. 17–14 Ma), the Middle Miocene Climatic Transition (MMCT; ca. 14–13 Ma), and the eruption of the Columbia River Basalts (~95% of its volume 16.7 to 15.9 Ma). This collaborative study focuses on 18 PNW fossil plant sites spanning ca. 32 to 10 Ma, many of which have extensive pre-existing macrofossil collections. First, we radiometrically date interbedded tuffs at these sites to establish a high-resolution temporal framework, using U-Pb/CA-ID-TIMS. We present new dates for the Clarkia/Emerald Creek, Alvord Creek, Juliaetta, Pickett Creek, Whitebird, and Trout Creek fossil sites. Within this temporal framework, we are: 1) documenting regional climate change in the PNW during the MMCO and MMCT using paleobotany-based paleoclimate proxies, and 2) providing an integrated perspective on the response of plant communities to these mid-Miocene environmental changes by combining macrofossil, palynomorph, and phytolith evidence. Taken together, these data will provide a regionally-comprehensive perspective on the sensitivity of terrestrial vegetation and climate to global climatic events known more extensively from marine records.

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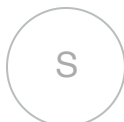
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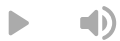


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Presentation File(s)



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