The Influence of Log Jams on Floodplain Soil Moisture
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INTRODUCTION
Research question:
Do large wood(LW) jams cause a higher water content in underlaying soil in comparison to soils not underneath jams?

LW benefits to the river network:
• Increases underlaying soil nutrients LW in floodplains (Zalamea et al., 2007).
• Establishes sites of seedling establishment (Petit and Naiman, 2006).
• Provides modification to geomorphic processes (Collins et al., 2012).

An improved understanding of LW’s role within the river network will lead to better management of river networks and the LW within this system.

METHODS
Sampling Techniques for Soil Moisture Sensor Data
Figure 2. Soil moisture sensor readings (2A) and location (2B) of jam 26 at reach 28.

RESULTS
Soil moisture content by location

Other variations in soil moisture

Additional differences between underneath and adjacent jam measurements

IMPLICATIONS
• No significant differences in soil moisture underneath jams compared to adjacent to jams in measurements taken without recent rainfall
• Soil moisture appears to be higher adjacent to jams after recent rainfall, likely due to jams protecting soil during rainstorms and impeding water infiltration
• Grain size and soil color (indicates organic matter content) strongly control soil moisture, with coarser and lighter soil containing lower soil moisture
• High variability in soil moisture due to rainfall events indicates the need to continuously monitor soil moisture to capture variability
• The organic layer is thicker underneath jams, indicating that over longer time scales (e.g., multiple decades), jams may have an influence on soil moisture as organic material decays and becomes incorporated into the subsurface

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