

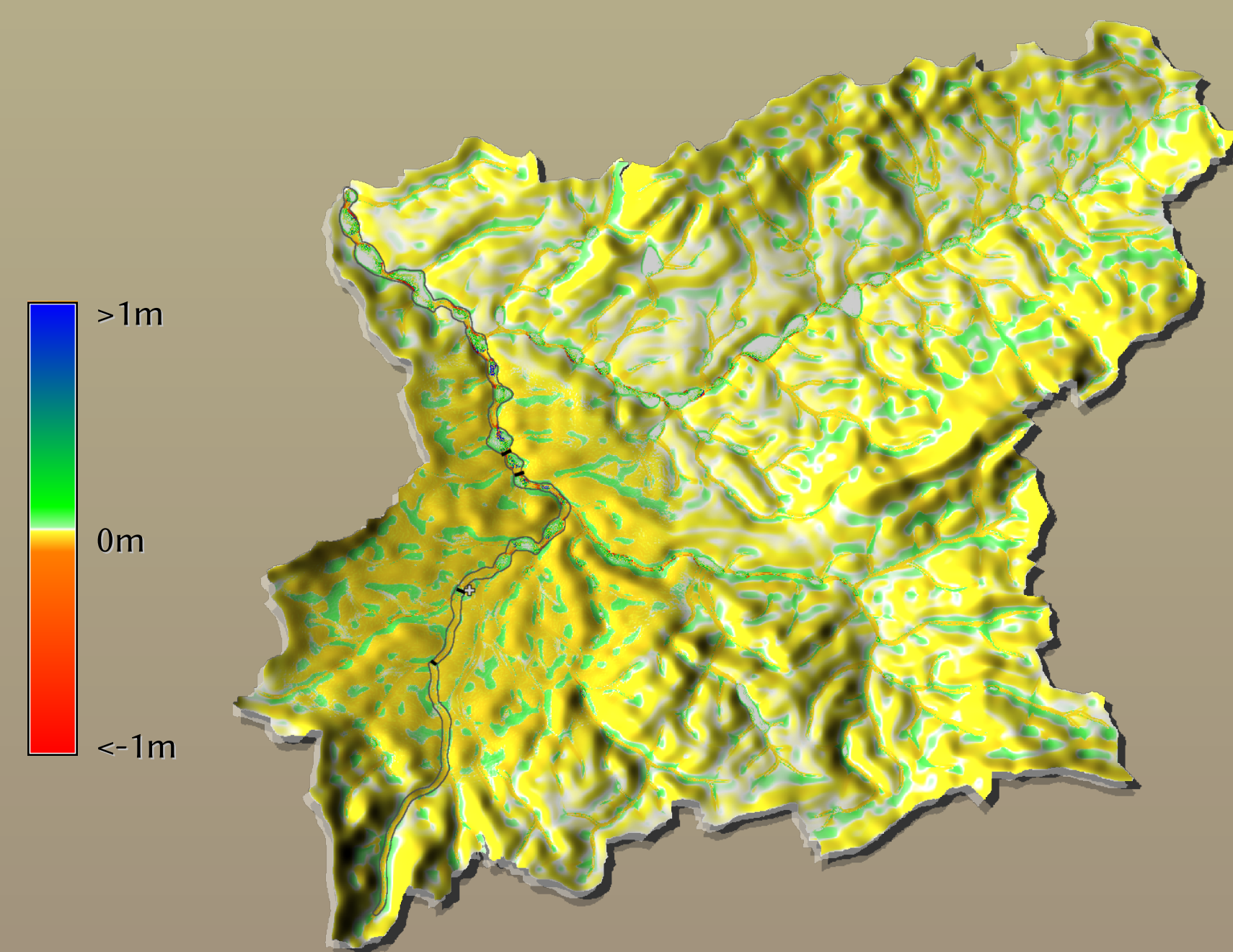
Connecting the Human and Natural

Coupled Human-Earth Systems Models and the “Digital Proxy Record”

Isaac I Ullah,¹ Nicholas Gauthier,² Nari V. Miller,² and Grant Snitker²

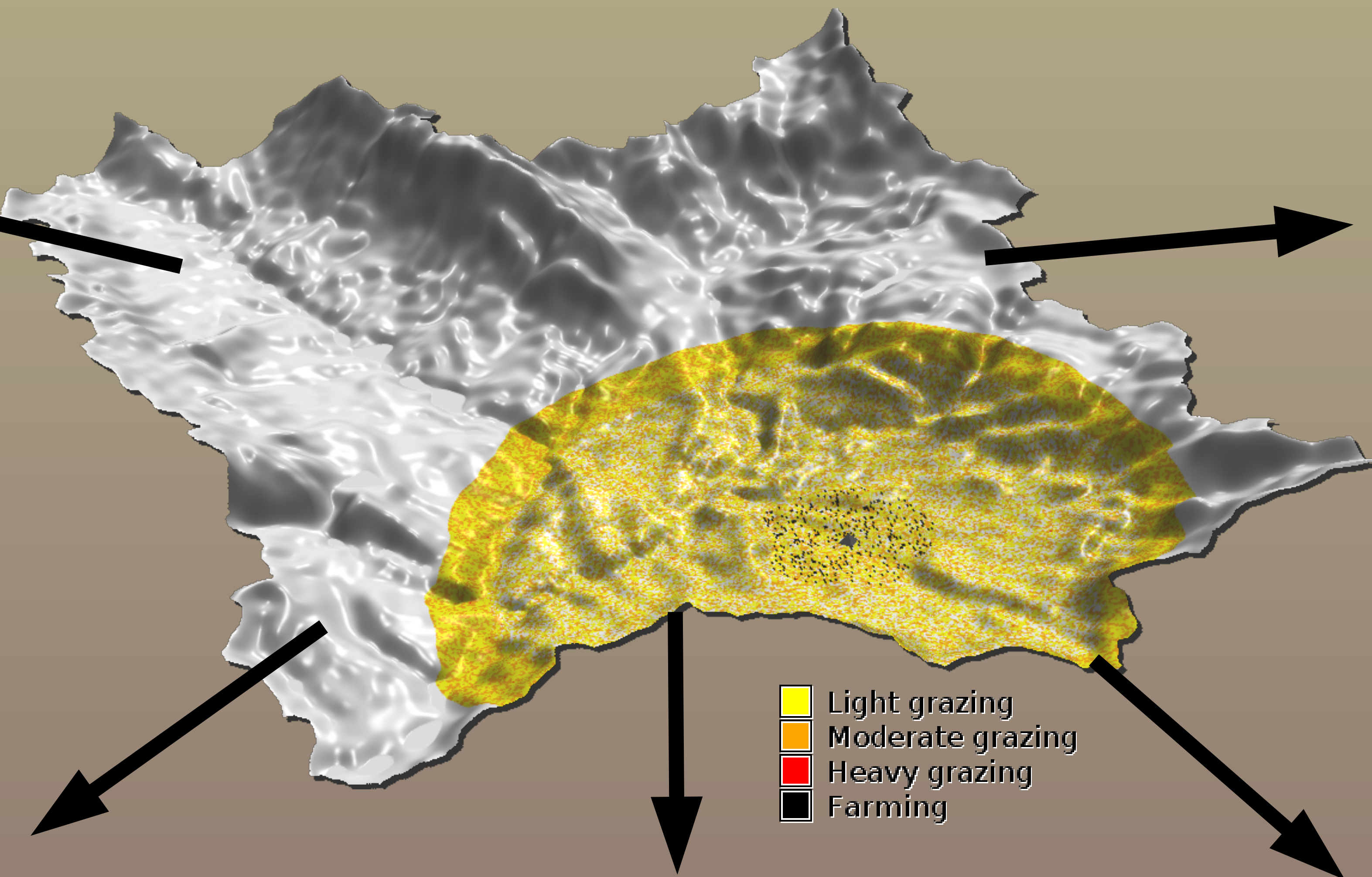
¹San Diego State University, ²Arizona State University

Erosion and Deposition

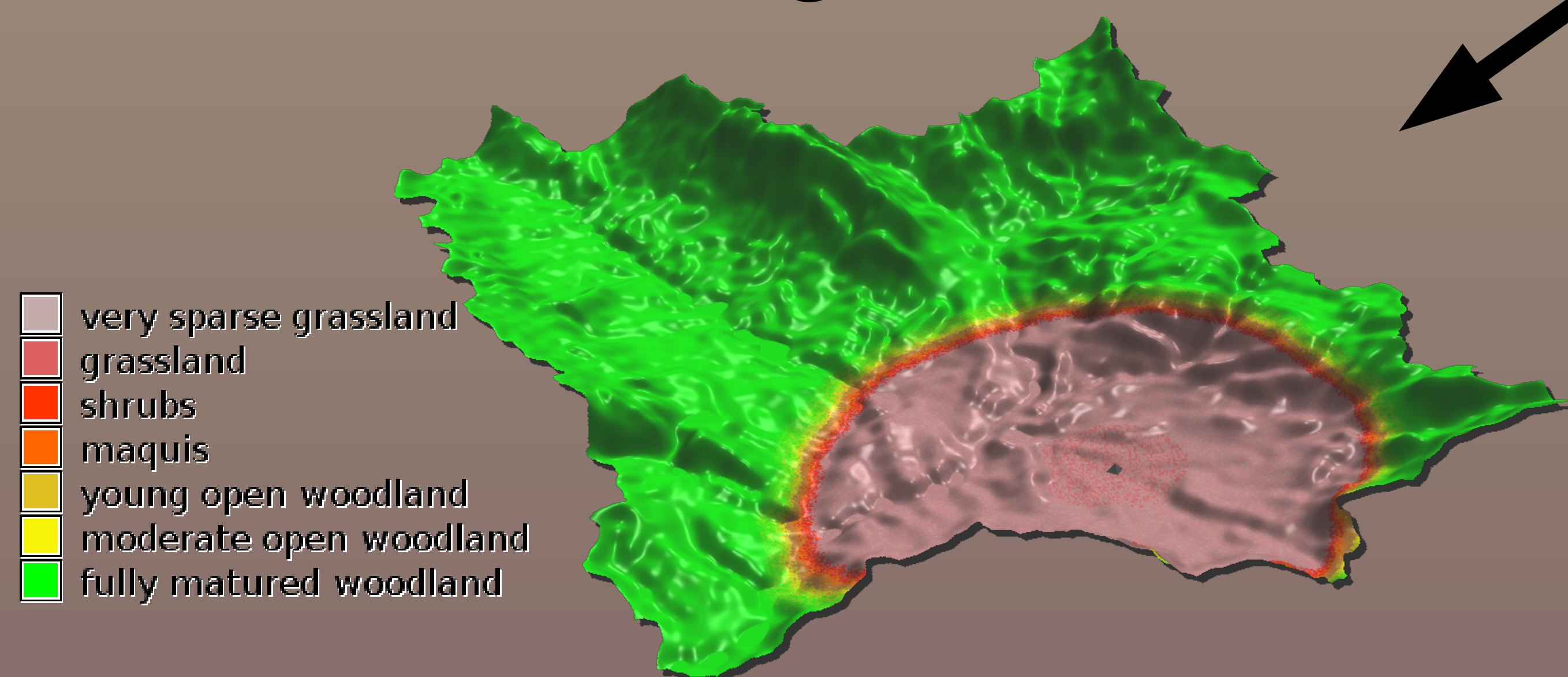


Proxy: Stratigraphy

Agent-Based Model of Human Land-Use

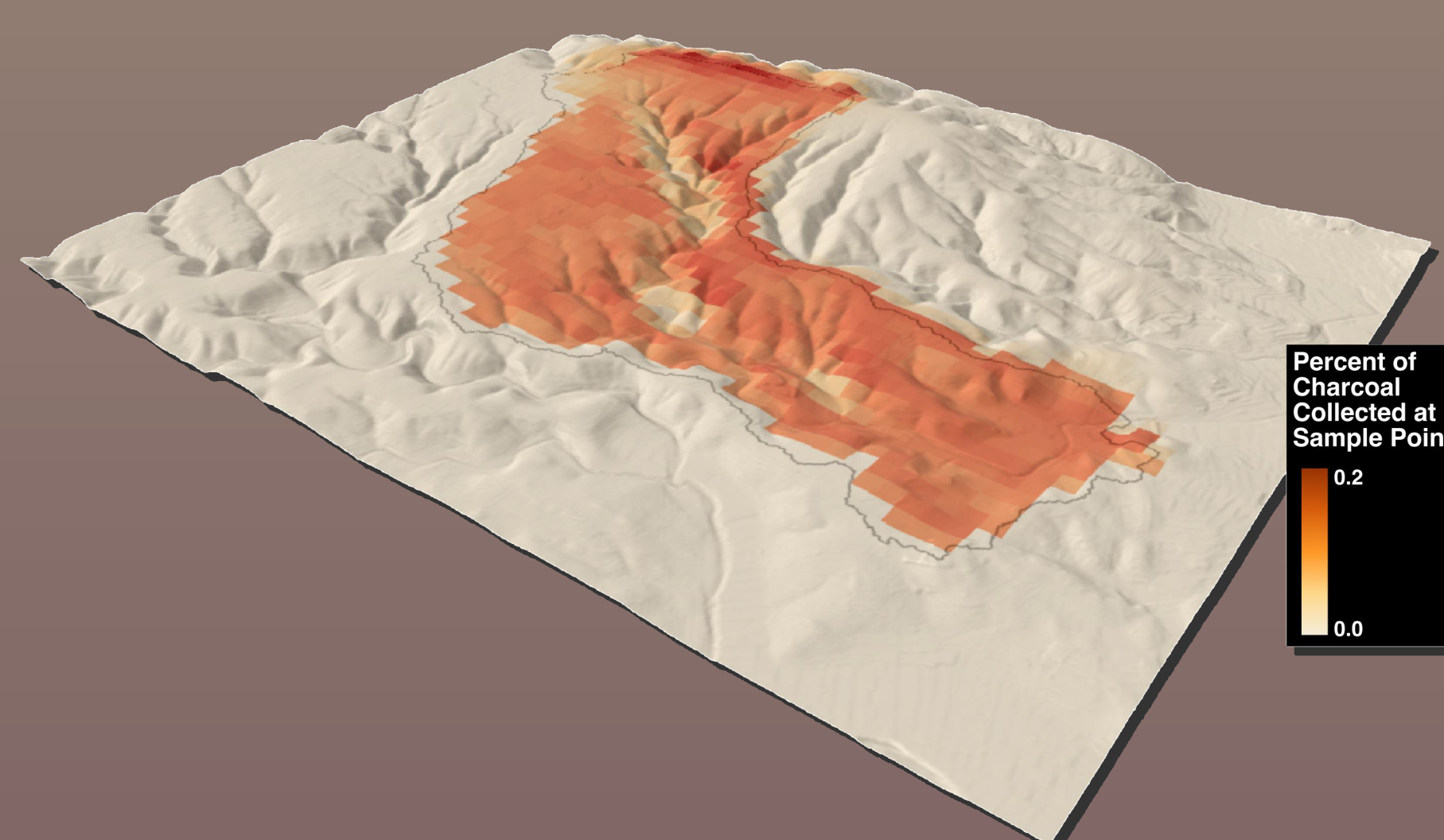


Vegetation



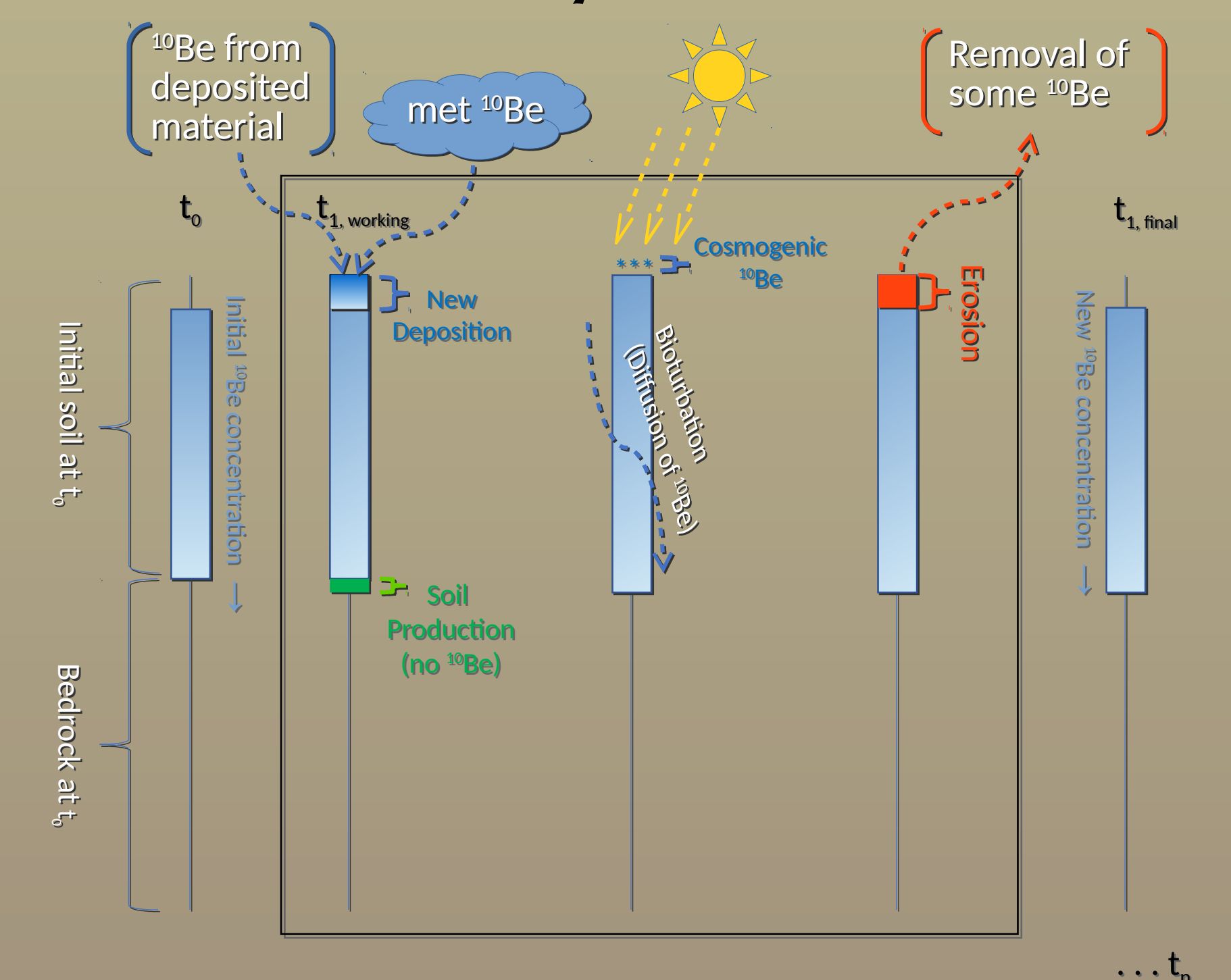
Proxy: Phytolith Densities

Fire



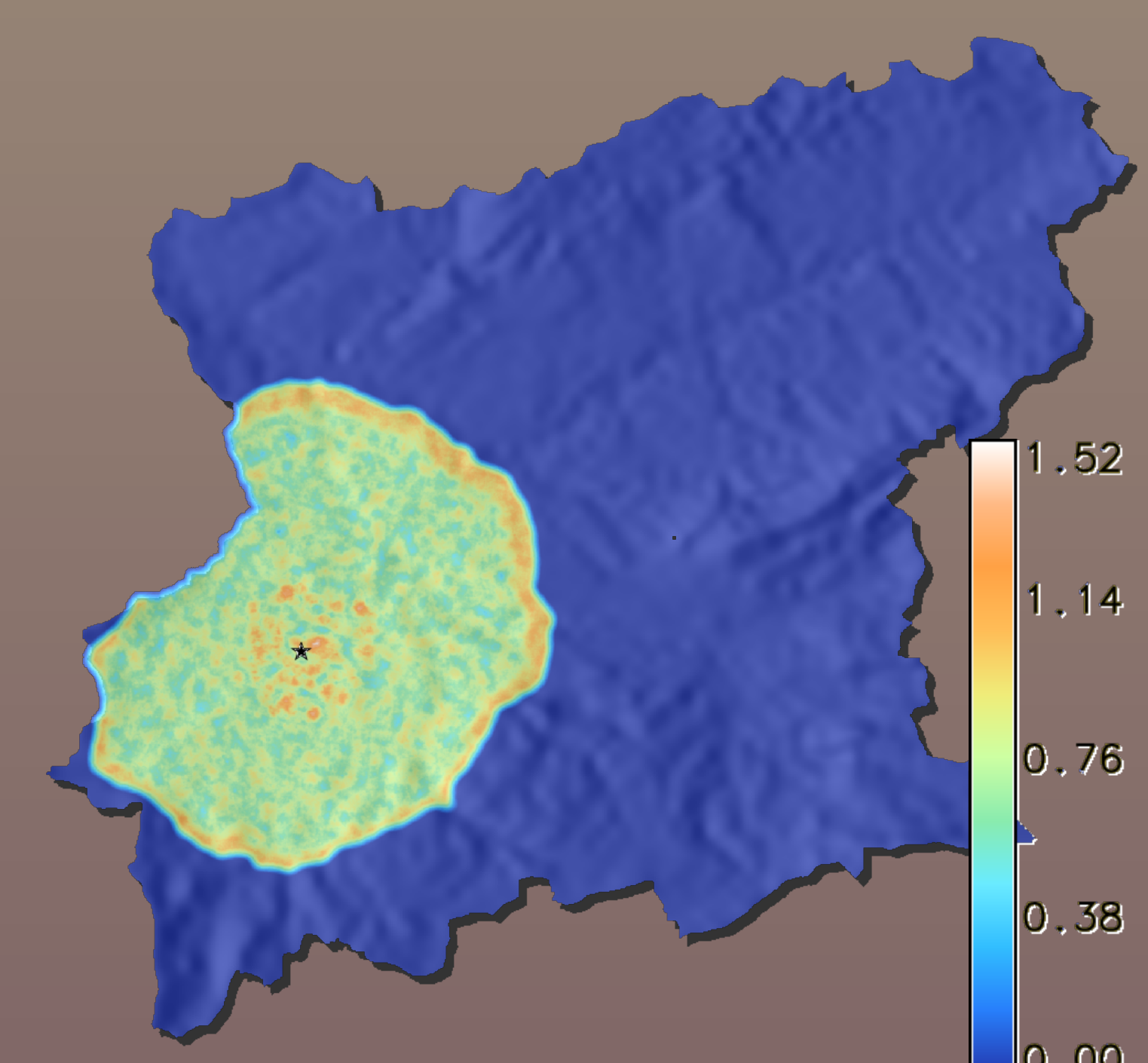
Proxy: Charcoal Densities

Soil Dynamics



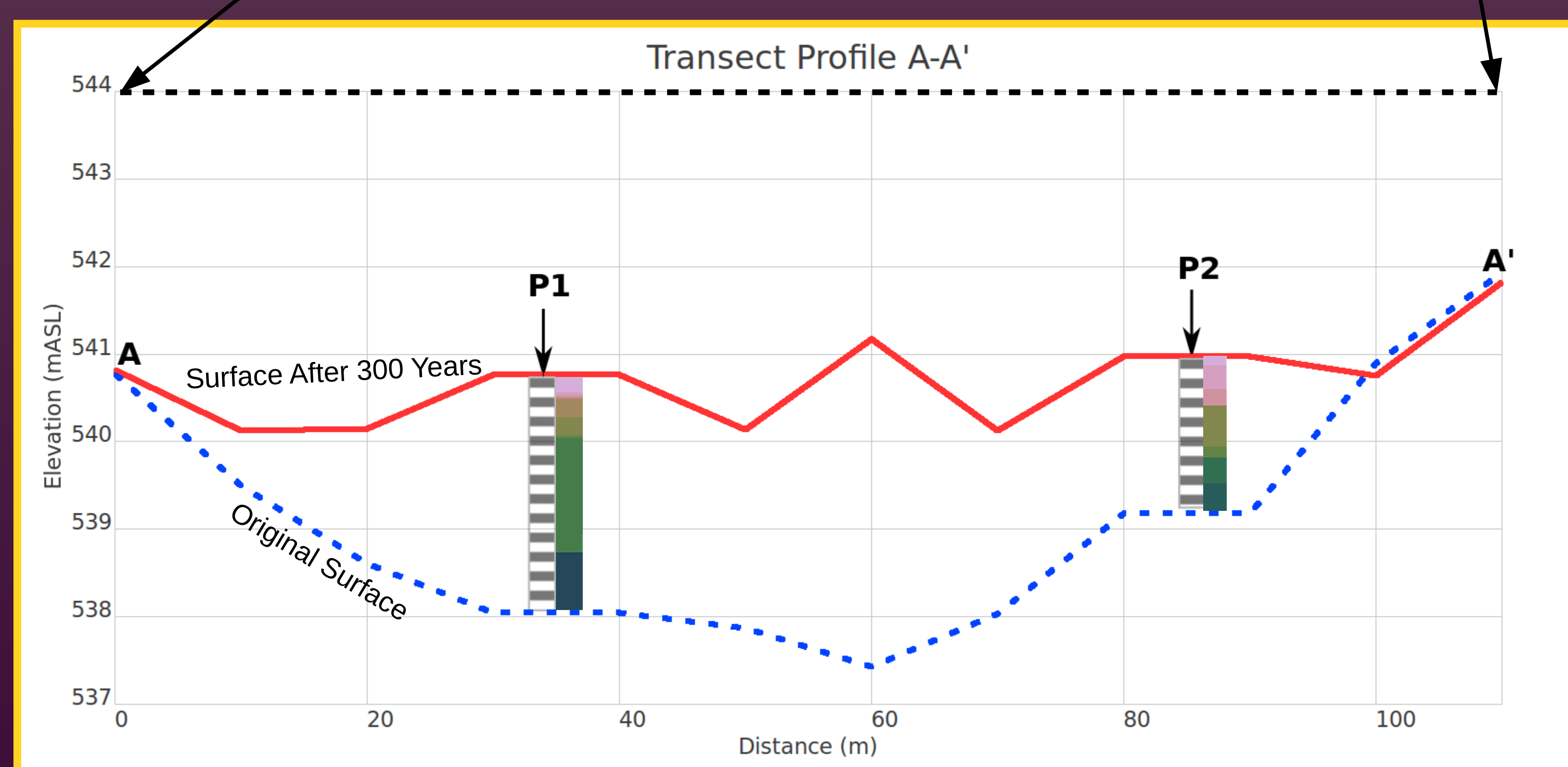
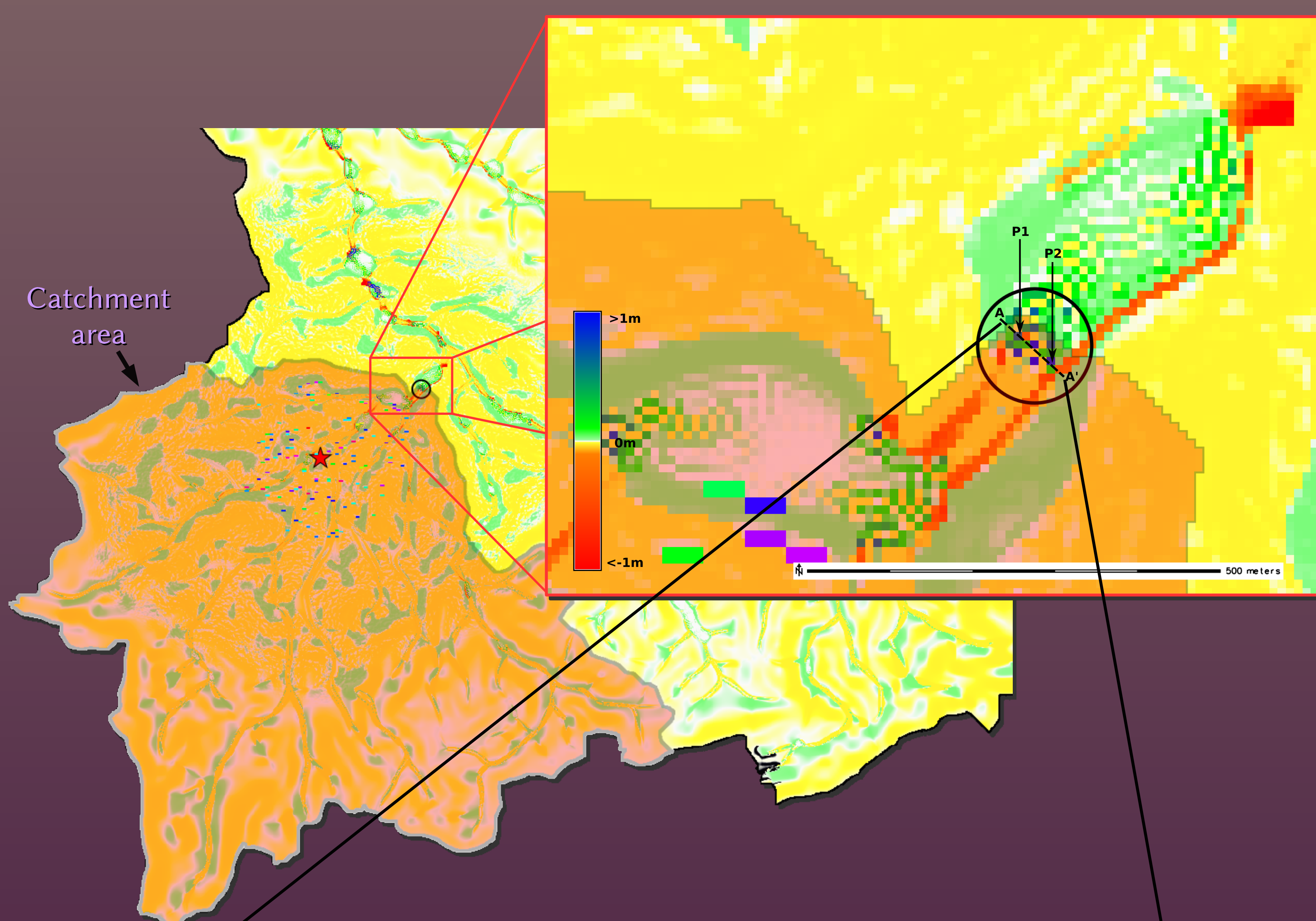
Proxy: Cosmogenic Nuclides

Land-Use Intensity

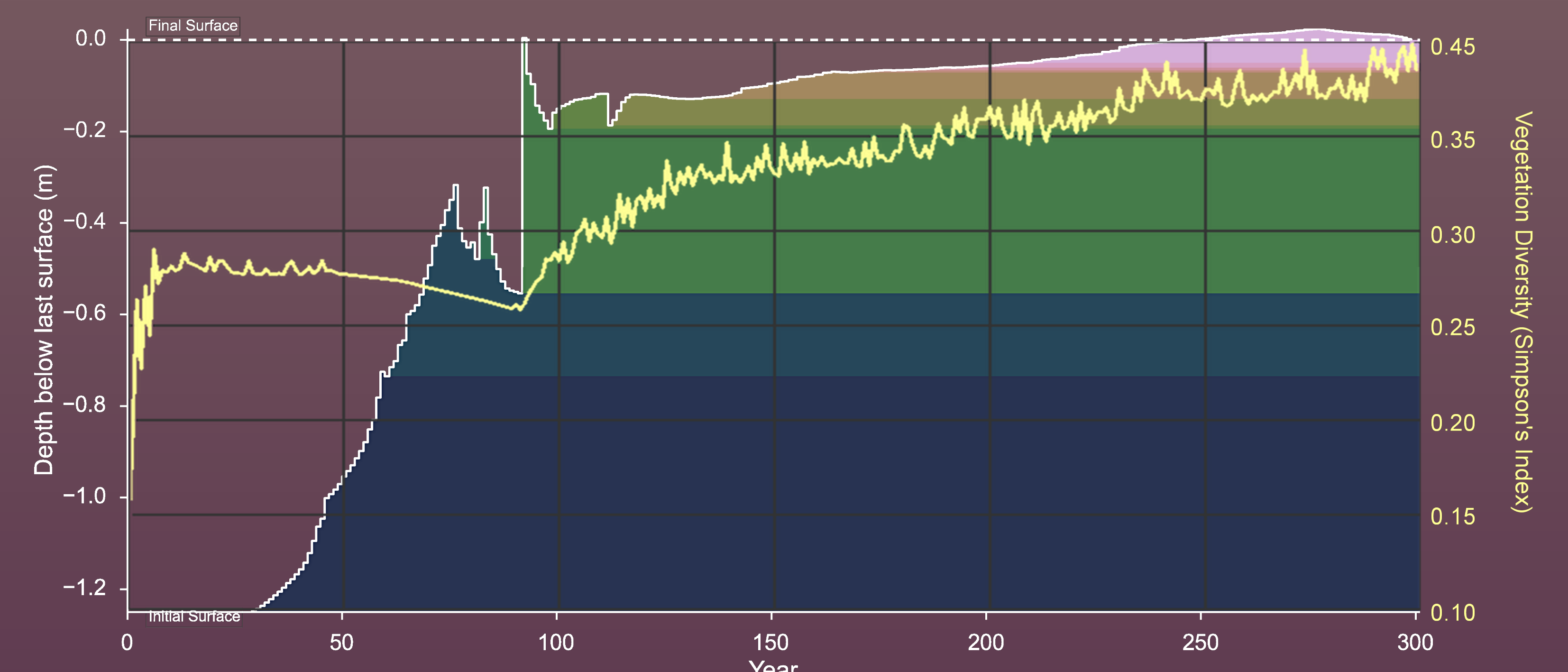


Proxy: Density of Archaeological Artifacts

Creating Digital Stratigraphy



The Temporal Dynamics of Stratigraphy



Comparing Digital and Real Proxy Archives

