

DIATOMACEOUS BIOLOGICAL SOIL CRUST COMMUNITIES IN
YELLOWSTONE GEOTHERMAL SOILS

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A combination of geothermal conditions in an alkaline-chloride soil environment in Yellowstone National Park supports a novel assemblage of biological soil crust organisms living in a siliceous matrix largely composed of diatomaceous residuum. This unique intersection of thermal soils and biological soil crusts creates an environment that is amenable to diatomaceous growth and frustule deposition and harbors a diverse array of microorganisms conspicuously striated on a small vertical scale. We present a description of the environmental conditions affecting this site, as well as a metagenomic analysis of the eukaryotic and prokaryotic microbial diversity present, with an emphasis on scales, from the soil particle scale to the soil core scale, and across an apparent successional sequence.

ORAL Presentation, and we submit this project in haiku form:

Diatomaceous
layers o'er magma-warmed soils.
The bison stand guard