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*Soil Biogeochemical Development of the Mendenhall Glacier Forelands*

When a glacier retreats, seemingly barren areas are exposed. Although these soils appear lifeless, research has revealed that they contain a variety of microbes that may play a key role in the biogeochemical development of the soil. A previous analysis of soils collected in 2006 from recently deglaciated areas surrounding the Mendenhall Glacier in Alaska revealed that organic carbon (C) levels initially decreased after exposure from underneath the glacier and later decreased again due to the changing composition of the microbial community. The aim of my research was to determine whether the microbial community was responsible for the changing C levels. 41 samples with exposure times of 0, 1, 2, 6, and 10 years were collected in the summer of 2008. The amount of C in each was measured using a combustion reduction elemental analyzer. Comparison of mean percentage C versus time revealed that the amount of C increased gradually with exposure time. However, analysis of variance indicated that there was no significant effect of exposure time on C levels. Because C levels do not follow the previously observed patterns of an initial decrease followed by an increase, the microbial community may not be responsible for the variation in C levels. Another factor, such as pre-existing nutrient pools might be behind the changing soil chemistry. Although the effect of time on C levels was statistically insignificant, it may have been ecologically significant. Results showed that C levels increased slightly over time, indicating that change occurred in the ecosystem.