Microbial Dynamics in Arctic Tundra Soils: The Interplay of Plants, Soils, and Extreme Climate

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Despite the apparently harsh conditions, Arctic soils host very diverse microbial communities that are well adapted to this environment. As in other biomes, these communities are influenced by factors such as substrate chemistry, nutrient availability, and microclimate. In the rhizosphere, they are strongly influenced by plant activities, especially during the short growing season. I will review current knowledge on the factors that structure these communities and how these change across the growing season. I will also link these microbial dynamics to soil decomposition and soil formation. Finally, I will apply this framework to the role of soil microbes in ecosystem response to climate change.