Climate change is causing species with non-overlapping ranges to come in contact, and a key challenge is to predict the consequences of such species re-shuffling. Experiments on plants have focused largely on novel competitive interactions; other species interactions, such as plant-microbe symbioses, while less studied, may also influence plant responses to climate change. In this greenhouse study, we evaluated interactions between soil microbes and alpine-restricted plant species, simulating a warming scenario in which low elevation microbes migrate upslope into the distribution of alpine plants. We examined three alpine grasses from the Rocky Mountains, CO, USA (Poa alpina, Festuca brachyphylla, Elymus scribneri). We used soil inocula from within (resident) or below (novel) the plants' current elevation range and examined responses in plant biomass, plant traits, and fungal colonization of roots. Resident soil inocula from the species' home range decreased biomass to a greater extent than novel soil inocula. The depressed growth in resident soils suggested these soils harbor more carbon-demanding microbes, as plant biomass generally declined with greater fungal colonization of roots, especially in resident soil inocula. Although plant traits did not respond to the provenance of soil inocula, specific leaf area declined and root:shoot ratio increased when soil inocula were sterilized, indicating microbial mediation of plant trait expression. Contrary to current predictions, our findings suggest that if upwardly migrating microbes were to displace current soil microbes, alpine plants may benefit from this warming-induced microbial re-shuffling.