Fine root growth dynamics of four Mojave Desert shrubs as related to soil moisture and microsite

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Abstract Water is generally considered to be the major limiting factor for perennial shrub growth in the Mojave Desert, USA. However, the responses of active fine roots to soil moisture and microsite differed among \textit{Ambrosia dumosa}, \textit{Ephedra nevadensis}, \textit{Larrea tridentata}, and \textit{Lycium pallidum}, suggesting differences in root foraging strategies. \textit{Ambrosia} and \textit{Ephedra} had a positive linear relationship between active fine root lengths and soil moisture and more roots under the canopy, whereas \textit{Larrea} had a negative linear relationship and more roots in the interspace. \textit{Lycium} did not show a significant root/water relationship or significant differences between canopy and interspace microsites.