

Invasive grasses and drought shift taxonomy and function in native rhizosphere microbiomes

Dr. Marina LaForgia, UC Davis Hannah Kang, UC Davis Dr. Cassie Ettinger, UC Riverside Plants form close relationships with microbes in the rhizosphere – the soil directly surrounding plant roots



Interactions with other plants can shift the rhizosphere community



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What happens to the microbial community under invasion?

Invasive grass competition shifts microbial communities of native forbs





normalized abundance under competition



normalized abundance in pairs

How does rainfall variability affect these shifts?





Microbial composition is tied to soil moisture







Under drought, grass microbes outcompete forb microbes



Higher in competition (drought)

20

Higher in natives (controls)

Mobilome: prophages, transposons -Carbohydrate transport and metabolism -Defense mechanisms -Posttranslational modification, protein turnover, chaperones -Signal transduction mechanisms -Lipid transport and metabolism -Transcription -Amino acid transport and metabolism -Replication, recombination and repair -Coenzyme transport and metabolism -Cell wall/membrane/envelope biogenesis -Nucleotide transport and metabolism -Intracellular trafficking, secretion, and vesicular transport -Inorganic ion transport and metabolism -Replication and repair -Energy production and conversion -

log2 fold change in abundance

10

0

10





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Thank you!









California Native Plant Society

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