Comparing trophic dynamics in urban and desert ecosystems using arthropod communities on brittlebush (*Encelia farinosa*) Wendy A. Marussich and Stanley H. Faeth, Department of Biology, Arizona State University, Tempe, AZ 85287-1501

Do trophic dynamics differ in urban vs. 'natural' systems? Is trophic structure controlled by 'top-down' (natural enemies) or 'bottom-up' (limiting nutrients) forces in these systems? To address these questions, we have established long-term arthropod monitoring experiments at two permanent LTER study sites (President's House and Desert Botanical Gardens) and one natural desert preserve (Usery Mountain Park) on brittlebush plants. Brittlebush (Encelia farinosa) was selected because it is a common native desert perennial that is often used in urban landscaping. We are sampling the arthropod community and plant damage once per month, applying a water treatment every two weeks, and measuring plant volume and biomass accumulation four times per year. Arthropods are being identified to family and feeding-guild. By using the LTER permanent sites we hope to link these experiments to other LTER core areas by quantifying changes in ecosystem function as functions of trophic complexity and patch type. Ultimately, we will combine our experimental results with a patch dynamic model to better understand how

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