

Our goal is to improve our understanding of and ability to control riparian plant community composition and function following Tamarisk defoliation and mortality

The tamarisk beetle is having notable success in defoliating Tamarisk, which leaves us with the exciting questions of “what comes next”? Our Tamarisk research is exploring what effects the beetle defoliation/frass and Tamarisk mortality have on soil chemistry, light, and the litter layer, as well as on how these ecosystem characteristics help determine the plant community composition of the riparian zone.

We are currently taking a three-pronged approach to this research.

1. We are using long-term transects to assess how geomorphic setting, soil characteristics, and beetle defoliation relate to plant community composition and soil chemistry.



2. We have used ‘litter traps’ to determine how beetle defoliation and frass affect nutrient inputs into soils.



3. We are using greenhouse and field manipulation experiments to assess how soil fertility, Tamarisk litter, chip treatments, and other ecosystem characteristics affect the germination and growth of native and exotic plant species. Our data to date suggest that, without restoration treatment, more fertile soils may increase the success of some exotic plant species (e.g., *Acroptilon*/Russian knapweed and *Bromus*/cheatgrass).

