Effects of high salinity concentrations by *Tamarix* spp. on plant diversity and soil quality in riparian ecosystems of the El Paso region

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The saltcedar tree (*Tamarix* spp.) is an invasive plant species introduced in the United States, mostly prevalent in the Southwest, specifically in riparian ecosystems. The presence of saltcedar often results in plant and animal diversity decrease, high evapotranspiration rate, and salinity increase for the given ecosystem. Because *Tamarix* spp. are aggressive invasives, they have spread throughout riparian areas of the El Paso region, causing a reduction of the native plant species in this ecosystem. While efforts to remove the species have been made, the species show resilience to most removal methods. The purpose of this study is to analyze the effects of *Tamarix* spp. in three variant treatments; presence of saltcedar, removed saltcedar (restored), and native plant sites. The study utilizes the continuous transect sampling method in order to determine plant species diversity, abundance, vegetation count and vegetation diversity. Soil samples were also taken to analyze percent organic matter content, salinity, and moisture. Preliminary results show that the presence of saltcedar at Keystone Heritage Park shows a reduced diversity in riparian ecosystems. Native plots showed six plant species (*Larrea tridentata, Yucca elata, Prosopis glandulosa, Sesuvium verrucosum, Heliotropium curassavicum*), while the saltcedar plots displayed lower diversity with only two species (*Atriplex Elian’s, Sesuvium verrucosum, Heliotropium curassavicum*) and abundance. In addition, conductivity, which is directly related to salinity, averages at 5,380.25µS/cm for saltcedar presence, restored 8072.75µS/cm, and native 2597µS/cm. Further data collection and analysis is currently underway in order to distinguish the effects of saltcedar presence on soil and plant diversity of various riparian ecosystems.
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