

## Differential bat-use between native cottonwood galleries and non-native saltcedar groves in southern Arizona

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Invasive non-native species are often implicated in habitat alteration, degradation and loss of biodiversity. Saltcedar (*Tamarix* spp.) was introduced from Asia to the U.S. during the mid-1800's for erosion control but now dominates many western riparian landscapes. It is estimated that saltcedar occupies almost 1.6 million acres between northern Mexico and central Montana and from central Kansas to central California. Given its dominance along streamside habitats, it is important to understand its possible impact on species that use riparian corridors, such as bats. We monitored foraging bats using Anabat II (frequency division) ultrasonic bat detectors to evaluate and compare bat-use between native cottonwood-willow galleries and monotypic saltcedar groves near Winkelman, Arizona during summers 2005-2007. We also conducted limited active acoustic sampling using Pettersson D240x (time expansion) detectors coordinated with Anabat detectors using AnaPocket software. We deployed 4 bat detectors during each sampling period, 2 in each biotic community, and quantified bat-use as the average number of foraging calls/hr between the two habitats. We sampled bat calls for 8 months (842 detector hours), recording >35,000 bat calls. Although our data showed some year-to-year variability in bat-use on a landscape level, there was a strong correlation between bat foraging (i.e. average number of foraging calls/hr) and native (e.g. cottonwood-willow) vegetation ( $R^2 = 0.20$ ,  $F_{7,53} = 1.92$ ,  $p = 0.01$ ) across three years. We also evaluated how various bat species used the two vegetation types and this showed differential use of the two landscapes by species guilds. This evaluation of impacts from the spread of non-native species, particularly along riparian corridors, is critical. These habitats are already at risk from numerous anthropogenic impacts and once exotic species gain a toehold, it may be difficult, if not impossible, to adequately mitigate the situation. Despite the complex nature of many landscapes, our data gave us insight into how bats use the two biotic communities in southern Arizona and our study confirmed a strong correlation between bat foraging and native vegetation.