



Attacking the Invasive Saltcedar

Tamarix Ramosissima (tamarisk) or the more common name, Saltcedar, are evergreen or deciduous shrubs or trees that grow 1-18 m in height and form dense thickets. They have slender branches with grey-green foliage, scale-like leaves, pink to white flowers that grow masses, and usually grow in saline soils. The threat of these small trees and shrubs is that they are fire-adapted and have long tap roots that allow them to interrupt water tables and interfere with natural aquatic systems. Saltcedars are very invasive and disrupt stability of the native plant community by taking up salt from deep ground water, storing it in their foliage, and then depositing it in surface soil. This process not only monopolizes the ground water from plants, but also disrupts the soil environment, choking out other vegetation.

Saltcedars were brought over from Asia and Europe in the 1830s and planted as an ornamental; however, with no insect enemies of these plants in the U.S., the saltcedars were able to grow and multiply unchecked. This has caused a huge problem in North America, especially Texas, which has classified it as a noxious and invasive plant by the State of Texas. It is estimated that they infest 500,000 acres in this state alone. This species not only hogs the ground water, but also slows stream flow which increases flood risk, and shades out native forage and plants, leaving less food for livestock and wildlife. Thickets are often spotted invading shorelines of lakes and reservoirs and consume large quantities of water.

So how can we gain a foothold on this havoc reeking species? There are several options including physical removal, herbicide spraying, and biological control. With biological control being the most feasible. Using living organisms to suppress saltcedars may be a slow progress, but it is inexpensive, self-sustaining, and targets only saltcedar species.

The saltcedar leaf beetle, or tamarisk beetle, was first established in Texas in 2004 at Big Spring. There are four species of tamarisk beetles that have been imported and released in the U.S., three of which have been released in Texas. They are found throughout the region, from the Rio Grande at Big Bend National Park to north of Amarillo on the Canadian River, east to Possum Kingdom Lake on the Brazos River. As of 2014, leaf beetles were present on an estimated 60% of the saltcedar acreage in Texas. Saltcedar leaf beetles and their larvae eat the leaves and bark of the saltcedar, causing the foliage to die and fall from the tree. Once the

leaves are destroyed, the tree must use energy reserves in the roots to survive and regrow leaves. The trees will regrow leaves and this cycle will continue until the beetles have used all of the saltcedar's energy reserves and the tree will finally die. This is a slow process that can take up to 4-5 years; however, benefits from the beetle begin almost immediately. Defoliated trees use less water, sunlight can begin to reach the soil beneath the defoliated tree and encourage grasses and plants to grow, and the defoliated trees do not produce flowers and seeds, thus not allowing the trees to spread.

In this region, Mediterranean tamarisk beetles were released on Beals Creek near Big Spring in 2004. Since their release, these beetles have rapidly established and increased by number annually. After 5 years of defoliation by leaf beetles, the saltcedar canopy at a study site in Big Spring decreased by 85 to 95 percent, and about 20 percent of the trees were dead. Beetles from Big Spring have also been collected and released in adjacent counties and some have spread by flying to new sites. As a result, this species is now widely distributed across Howard, Martin, Mitchell, Glasscock and Borden counties. The beetle populations rise and fall depending on the weather. They prefer hot, dry weather and can be drowned by heavy rains and washed away by floods. When the larvae finish feeding, they move to the soil surface where they pupate, and since saltcedars typically grow in low areas, while they are on the soil surface they can easily be drowned by rain.

Curious about this year's beetle population, after having a colder winter and recent rains, we spoke with Mr. Allen Knutson, a Professor and Extension Entomologist for Texas A&M AgriLife Extension, who has been one of the several groups implementing the Saltcedar Biological Control Program. According to Knutson, the heavy rains this spring probably killed many of the beetles, however, there are several generations per year, and the numbers can increase quickly once drier weather returns. Knutson expects the beetles to continue to thrive in West Texas and continue reducing saltcedar infestations, which is good news for our groundwater resources!

Sources:

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Biological Control of Saltcedar *A. Knutson, M. Muegge and C. J. DeLoach*

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