The Curse of the Salt Cedar

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BEST INTENTIONS LEAD CONSERVATIONISTS ASTRAY

The best intentions can sometimes have dire consequences. This is what happened when well meaning conservationists brought the invasive salt cedar or tamarisk, *Tamarix ramosissima*, to the Southwestern United States in the late 1800s and early 1900s to control erosion along stream-beds and unlined irrigation canals and ditches.

photo: Dave Mills

Native to southwest Asia, salt cedar grows along watercourses and is a dynamic player in the biotic communities where it grows. It provides food and cover for wildlife, stabilizes stream banks and provides as well an attractive background for people. The pinkish-purple flowers are pretty enough to show up in commercial floral displays.

When the plant was first brought to the United States the concern was to have a plant that would thrive while accomplishing its mission of stabilizing stream banks. There was probably little or no thought given to how the plant would interact with other organisms or how artificial stream flow patterns in the Southwest would favor its growth and survival over that of native species.

In many areas of the Southwest, salt cedar accomplished its mission by reducing erosion, but the ecological costs to the riparian communities it impacted are too

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great. Today, land managers, conservationists, farmers and others are dealing with the numerous unintended consequences.

In healthy biotic communities there are systems of checks and balances that tend to keep the community in some sort of dynamic equilibrium. When the community is pushed out of this equilibrium, for instance by a flood, the members of the community will respond in such a way as to restore the equilibrium. This is not a conscious decision, except in the case of people, but is a hardwired evolutionary mechanism. Using the flood as an example, stream beds will change shape and composition. In one area the soil may be washed away taking soil and vegetation with it, but somewhere else on the stream bed new soil will be deposited and vegetation can begin to grow there.

The conditions under which salt cedar evolved in Asia are different from those found in central and southern Arizona. In Arizona, unregulated streams have their highest flow during the winter and spring months. This time period corresponds to the time that native species such as willow and cottonwood trees reproduce and disperse the best. Seed and stems flow downstream and set root if they find suitable conditions. Regulated streams, like the Colorado, Gila, Salt and Verde Rivers have dams that store water for when it is needed most for human activities, the summer time when demands for hydroelectric power and irrigation are high. Salt cedar disperses vegetatively and through seed and grows best under hot summer conditions when the native plants also grow well but disperse best during the winter-spring flow. Salt cedar has the added competitive advantage that few if any organisms feed upon its tissues. It is simply unpalatable to southwestern U.S. herbivores.

Today in many of the regulated streams listed above, salt cedar has replaced native species on several stretches. There are literally miles of salt cedar monoculture where native plants are choked out and little except cover is provided for native wildlife. Whereas native riparian communities have the highest species diversity of any southwestern biotic community, salt cedar communities have the lowest species diversity. With over 90 percent of Arizona's riparian communities lost or significantly altered it is important that management of salt cedar take on a prominent role.

Cave Creek, even though it is unregulated, has some salt cedar that can be controlled easily by cutting and treating the stumps with a systemic herbicide. The Desert Foothills Land Trust has been doing this (tammy whacking) on Cave Creek at the Watt Preserve for many years. Even though salt cedar can still be found at this preserve the surviving plants are not vigorous and in a few years they will be eliminated entirely from this stretch.

The Desert Foothills Land Trust with its Bring Back the Creek program is planning on removing all the salt cedar along Cave Creek in order to restore the native riparian woodland. Already several private landowners have joined the Desert Foothills Land Trust to help accomplish this goal.

For more information and to find out how to volunteer your participation when the next tammy whacking event is scheduled call 480.488.6131.