

How Invasive Plant Species Damage Natural Landscapes Like Sabino Canyon

WEED IT AND REAP



DO YOU KNOW?

- The three characteristics that earn a plant the label “weed”?
- What the second leading cause of habitat loss in the West is?
- Why the plants we call weeds are not a serious problem to their native ecosystems?
- Which are the top three invasive plants in Sabino Canyon?

Sabino Canyon supports a wide variety of native wildlife—from songbirds to toads and wild cats—because it is a botanically diverse natural landscape. As healthy habitat, Sabino Canyon provides the food and shelter resident wildlife need to successfully reproduce and thrive.

Unfortunately, invasive plants like Buffelgrass, Fountain Grass and Giant Reed have gained a foothold in Sabino Canyon and are quickly outcompeting and crowding out many native plants and may soon dominate the landscape.

As this happens, today’s interdependent network of native plants, insects and animals unravels and will be transformed to a monoculture largely dominated by invasive plants to which native wildlife are not adapted.

- Giant Reed Grass (*Arundo donax*), for example, suppresses the growth of native cottonwood and willow seedlings along Sabino Creek and competes with mature trees for soil moisture, while providing less shade. Besides using four times as much water as any native plant, giant reed is altering the creek’s natural flow, eliminating habitat for native aquatic wildlife.

What earns a plant the label “weed”?

In a natural landscape, weeds are plants that have three characteristics: they are non-native, aggressive and they thrive on disturbance.

1. **Non-native.** Weeds are not pests in their native ecosystems. Where these robust plants evolved,

natural predators like specialized bugs and diseases prey on them and keep them in check.

- For example, along the Colorado River where Asian tamarisk has been introduced, it has no native predators and completely overruns riversides. In China, where tamarisk evolved, gardeners must treat their tamarisk with insecticides if they don’t want native bugs to devour them.

Without natural enemies in our landscapes, alien plants quickly outcompete native plants.

2. **Aggressive.** Weeds are plants that reproduce abundantly, tolerate a broad range of climatic conditions and—once established—are tough to eliminate.

- Each clump of Buffelgrass produces thousands of lightweight seeds that disperse easily, and Buffelgrass is drought tolerant and thrives in a wide variety of poor soils. As a result, it spreads rapidly around Tucson, doubling the area it occupies each year.

3. **Thrive on disturbance.** Wherever natural landscapes are distressed, either by natural disasters like floods, or by human-caused intrusions like dams and roads, weeds invade and prosper.

- Buffelgrass thrives on intense wildfires, while Sonoran Desert plants are not adapted to the hot-burning wildfires caused by dense stands of Buffelgrass. Buffelgrass burns readily and then re-sprouts quickly, using wildfire to spread by

- eliminating competition from native plants.
- The disturbance of roadbuilding is a prime invasion pathway for weeds. A bulldozer's blade clears off native plant cover that would normally resist weedy intruders. The weeds are then free to sprout and spread on bare-earth roadsides. Weeds like Buffelgrass and Fountain Grass quickly spread from road shoulders into washes and surrounding natural areas.

Weed seeds take us for a ride. They stick to our shoes, clothes, tires and to our domestic animals. It's an efficient system for the weeds: Humans build roads, then disperse the weed seeds along them. Even when we visit natural areas only to hike or bike, seeds of these alien travelers stowaway on us and invade our complex native ecosystems, taking over and stealing habitat from native wildlife.

Without natural enemies, these scrappy alien plants thrive wherever humans live, work or play. In the West, the damage done by invasive species is considered the greatest threat to native ecosystems after outright destruction of habitat through urbanization and agriculture.

How do we protect native habitat from a weed take-over? Once established in a landscape, weeds have more lives than cats. With any weed-fighting strategy, people must return and kill them year after year. For this reason, the most effective weed management strategy is to prevent weeds from becoming established. Eliminating the disturbance on which weeds thrive is important. When weeds do sprout, they must be prevented from completing a season from seedling to seed bearing.

Once weeds are established, there are several strategies to get rid of them; no one of them is completely satisfactory. Weeds on a one or two-year lifecycle can be yanked and removed, taking care to bag them so their seeds do not escape. Biological weapons, such as specialized bugs that prey on the specific weed plant in its native

ecosystem, can be introduced but it is risky to introduce one potentially pesky exotic element into an ecosystem to control another one.

Buffelgrass, Fountain Grass and Giant Reed are perennial. If you cut the tops off these plants, they grow back stronger. In cases where the size of a perennial weed infestation is small enough, people can dig out the roots and remove the whole plant. However, if the infestation is large, an herbicide is necessary. In these cases the choice is stark, but clear: either use an approved, carefully administered herbicide or lose the natural habitat and the native wildlife that goes with it.

A multi-prong approach that seems to work includes digging out weed roots, removing top growth with the seed heads and spraying an appropriate herbicide where necessary. Citizens need to be aware that weeds are not merely an annoyance, but quickly degrade and destroy wildlife habitat and endanger lives, property and landscapes through the spread of intense wildfires.

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Sabino Canyon's top three weeds:

- Giant Reed (*Arundo donax*)
- Green Fountain grass (*Pennisetum setaceum*)
- Buffelgrass (*Pennisetum ciliare*).

For further information:

Tucson Arundo Removal website:

sahra.arizona.edu/education2/arundo/

Arizona Master Watershed Stewards Program:

cals.arizona.edu/watershedsteward/resources/index

Arizona Rivers: azrivers.org

buffelgrass.org

U.S. Forest Service:

fs.fed.us/publications/policy-analysis/invasive-species-position-paper.pdf

Bureau of Land Management:

blm.gov/weeds/PullingTogether/PullingTogether

Partners Against Weeds:

<http://www.blm.gov/weeds/PAW/index.htm>