



## Non-Native Plants in the Sonoran Desert



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### General Information

Invasive non-native species (also known as exotic, alien, or non-indigenous species) are plants and animals that are not native to an area but have established themselves due to human activities.

People have transported plants to new locations for hundreds of years - many were introduced for agriculture, landscaping or range improvement. These relocated species become a problem, however, when they successfully colonize and spread into new areas.

Non-native plants become established because the controls from their home habitat (predators and disease) are absent. They usually spread rapidly by producing huge numbers of seeds or by sprouting from the roots. Many also have physical or chemical protection from being eaten such as thorny or unpalatable leaves. Non-native plants frequently become established in disturbed areas, where competing native vegetation has been removed.

Non-native plants may cause drastic changes to landscapes, out-compete native plants, and disrupt ecosystems. In worst case scenarios, native plants can ultimately become extinct.

The Sonoran Desert is a fragile environment, and invasive non-native plants threaten specific native plants such as the saguaro cactus, as well as the entire Sonoran Desert ecosystem.

However, not all non-native plants are invasive enough to displace native plants. For example, many non-native plants need some form of disturbance, such as fire or trampling, to become established. On the other hand, some non-native plants are extremely invasive and have the ability to out-compete native plants without any disturbance occurring first. These invasive non-native plants are the greatest concern here at Saguaro National Park and throughout the desert southwest.

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### The Real Problem

Non-native plants change how a landscape looks. When they invade an area, these plants may out-compete and reduce numbers of native species. Animals that rely on these native plants for food are then affected as well. This reduced biodiversity affects all inter-related species in an ecosystem. Nearly half of the threatened and endangered plants in the United States are directly threatened by non-native invasive plants.

Non-native plants change how ecosystems function, sometimes causing increased wildland fire where it once was rare. In the Sonoran Desert, non-native grasses are frequently found growing between trees and shrubs, filling in normally bare ground. When

a fire starts, non-native grasses carry a fire through large areas of desert. Because most of our native vegetation, such as saguaro cacti and palo verde trees, are not adapted to fire, they are killed. However, many of the non-native grasses respond favorably to burning and their populations may increase after a fire.

As more people move to the desert, a tremendous increase in human-caused fires has been documented, which severely impacts a variety of desert vegetation.

Non-native plants and animals combined cost taxpayers an estimated \$123 billion per year in damages, losses, monitoring and control.

## What Can You Do?

Over the past few years, volunteer crews have pulled thousands of exotic plants from throughout the park. We have had success with these projects, but can always use additional help. If you would like more information, or want to help out, please call the park at (520) 733-5153.

You can also help control non-native plants in your own area:

Do not disturb natural areas by hiking, riding or driving off trail as non-native plants often establish themselves in disturbed areas.

In gardening and landscaping, use only native plants or proven non-invasive varieties. These are better

adapted to the local environment, use less water and are beneficial to wildlife.

On trips, inspect your shoes, clothing and car to be sure you haven't picked up seeds or plant parts.

Learn the non-native plants in your area and remove them from your property, especially before they set and disperse seeds.

Educate and encourage your neighbors, local businesses and government agencies to remove non-native plants on their lands.

Volunteer for organizations or agencies in the Tucson basin, or your area, to help with their non-native plant removal programs.

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## America's Least Wanted

There are two species of African bunch-grass that cause serious problems at Saguaro National Park and in the desert southwest:

### Buffelgrass

Buffelgrass (*Pennisetum ciliare*) is a large, perennial bunchgrass which was introduced to Arizona in the 1940's to improve grazing lands. Buffelgrass grows about 2 feet tall, crowds out native vegetation, and is adapted to frequent fires. Its seeds are light and easily dispersed by the wind; these seeds can remain dormant for two to three years before sprouting. Buffelgrass now covers millions of acres in the southwestern U.S. and Mexico. In many places it has permanently replaced native vegetation. It also does well in urban areas and is common along roadsides and vacant areas in Tucson.



### Fountain Grass

A showy bunchgrass with long, white to purple seed stalks, fountain grass (*Pennisetum setaceum*) was introduced for ornamental use. Like its relative buffelgrass, it also has light, wind-dispersed seeds. It grows to 3 feet tall, and is common along roads, washes and canyons around Tucson. Where it takes root, fountain grass establishes huge colonies, crowds out other plants, and is very difficult to eradicate.