

Grow Native! don't plant a pest

a guide to invasive landscape plants and their native alternatives



SOUTHEASTERN ARIZONA
www.aznps.org

The Sonoran Desert inspires gardeners throughout southeastern Arizona, but desert gardening is a challenge. We need low-water use plants that stand up to blazing heat, and we also want reliable blooms, striking forms, shade, and lush growth. Many of us also look for plants that attract hummingbirds, butterflies, songbirds, and wildlife.

Hundreds of introduced landscape plants from other arid regions have found their way to local nurseries and home stores. Unfortunately, some have adapted all too well to their new home. They have escaped from managed landscapes and are invading Arizona's natural areas. These pests tend to grow and spread aggressively. They crowd out native plants and compete for limited resources. When this occurs, a plant is considered to be **invasive**. These plants threaten the unique plant and animal diversity of southeastern Arizona.

Hiding in Plain Sight

Often, invasive plants don't reveal themselves immediately. They may seem to be well-behaved landscape plants for decades. Eventually, a few escape and adapt to natural areas. Then, without warning, the invasive plant population can explode. Without prompt action, an invader may overwhelm a natural area. The deserts, grasslands, mountains, and riparian areas of southeastern Arizona are rich in biodiversity. Plants, animals, and soil organisms have evolved together over thousands of years to form intricate communities. Invasive plants upset this balance. Their impacts can cause a chain reaction of harmful effects to the environment.

On the Loose and Out of Control

What happens when invasive plants take over?

Here's a quick look at fountain grass, *Pennisetum setaceum*. It has become a dangerous invasive that fuels fires and threatens native ecosystems, especially riparian areas.



Fountain grass was introduced from Africa as a graceful ornamental. This widely planted grass continues to be promoted by some landscapers, landscaping books, and lifestyle magazines.



Fountain grass spreads by seed into canyons and washes and along roadsides. It crowds out native plants and dries into fuel for wildfires.

Dense clumps of dry fountain grass fuel fierce fires. Native desert plants are not accustomed to "hot" fires. They often die, but fountain grass quickly re-sprouts after a burn. As fountain grass takes over a landscape, it fuels even larger fires and reduces native plant and animal populations and diversity.

Buffelgrass, *Pennisetum ciliare*, a close relative to fountain grass, is also a dangerous fire threat. Sold as cattle forage, buffelgrass is an aggressive invader. It has spread along roadsides into urban areas and wildlands. Buffelgrass fires can kill saguaros, palo verdes and other signature plants of the Sonoran Desert. By removing fountain grass and buffelgrass from your area, you're helping to preserve the Sonoran Desert as we know it.

Why Plant a Pest When You Have AlterNATIVES?

Southeastern Arizona boasts many interesting native plants that can create a diverse, colorful, and vibrant garden. They come in many colors and shapes, and provide great habitat and forage for wildlife. Native plants are well adapted to our desert climate and can survive periods of drought. Planting natives can save you money and help conserve scarce water resources.

The invasive plants in this brochure have known negative impacts on southeastern Arizona's wildlands. The natives that we recommend fill a comparable functional role in a landscape, thrive in similar environments, or are similar in appearance. These **AlterNATIVES** are all widely used and available commercially. Specialty or native plant nurseries are excellent sources for them.

Other non-native plants have also escaped cultivation, but their ecological impacts and invasiveness are uncertain. Finding a non-native plant in a natural area is a clue that it has the potential to become invasive. Our complex environment prevents us from predicting which non-native plants will aggressively invade natural environments. But potential invaders usually get their start by spreading in urban and disturbed areas.

Choosing native plants limits the potential of future invaders. Removing invasive plants from urban and natural areas is expensive and often seems impossible. By choosing to limit introduced plants, we act responsibly and eliminate additional seed sources. If you landscape next to a natural area, be especially careful to use only local native plants. By growing native, all of us can help conserve our awe-inspiring wildlands.

Invasive plants impact natural areas by:

- fueling unnatural and destructive desert fires
- displacing native vegetation
- degrading wildlife habitat
- depleting soil nutrients
- increasing allergens
- altering natural water flows

Common characteristics of invasive plants:

- high seed production
- rapid growth
- efficient seed dispersal mechanisms
- reproduction without pollination
- tolerance to a wide range of soils
- toxic or unpalatable to wildlife
- once established, difficult to control

Green fountain grass

Pennisetum setaceum
INVASIVE WEED

An African grass that spreads aggressively by seed and forms dense clumps, choking out native plants and altering wildlife habitat. Fountain grass is an extreme fire hazard to homes, native plants and animals.

Fountain grass comes in many varieties. All should be considered invasive until tested and verified. No variety is recommended for planting.



Other grasses to avoid:

Kikuyu grass *Pennisetum clandestine*, **Feather top** *Pennisetum villosum*, **Pampas grass** *Cortaderia selloana*

Try these alterNATIVES

Desert spoon *Dasyliirion wheeleri*

A symmetrical and graceful agave-like plant with long, slender, blue-green, toothed leaves arching from a central trunk reaching a height and width of 3 ft. Flowers bloom creamy white on stalks 10-12 ft tall in spring through summer.



Arizona cotton top *Digitaria californica*

A perennial bunch grass growing up to 3 ft tall. Produces erect flower stalks adorned by soft, delicate, fluffy white cottony seeds. It makes a striking display when planted in groups.



Bull grass *Muhlenbergia emersleyi*

Grows as a clumping perennial grass up to 5 ft tall with light pink flowering plumes blooming in summer. Makes a nice accent in rocky areas or flat terrain.



Other grasses to try:

Deer grass *Muhlenbergia rigens*
Bamboo muhly *Muhlenbergia dumosa*

Bermuda grass

Cynodon dactylon
INVASIVE WEED

Aggressively invades yards, gardens, and riparian areas; inhibits the natural meandering of streams; competes with native plants for space, light and nutrients, and forms dense mats that inhibit the growth of other species. Removal is difficult because of an extensive system of underground stems, up to 1 ft deep in soil. Bermuda grass can also be a hay contaminate.



Try these alterNATIVES

Turf and lawn grasses are often invasive, require regular maintenance and are high water users. If closely planted and mowed, the two native grasses recommended below will resemble turf.

Blue grama *Bouteloua gracilis*

A low-growing perennial bunch grass up to 1.5 ft tall with blue-green foliage. Seed heads appear in summer, curling when dry to look like eyelashes. Grama grass grows into an attractive specimen or turf. Wildlife relish this palatable and nutritious grass. Blue grama survives heat, drought, and cold.



Curly mesquite *Hilaria belangeri*

A drought tolerant sod-forming grass which spreads by above-ground runners, growing up to 12 in tall. It may be hard to find, try nurseries specializing in native plants.



Other features to consider instead of a grass lawn: rockscape, cactus garden, native wildflower garden, gravel, sand, or artificial turf



Giant reed

Arundo donax
INVASIVE WEED

In riparian communities, giant reed competes with cottonwood and willow trees for soil moisture and suppresses native seedlings. Giant reed provides less shade which increases water temperatures and alters aquatic wildlife habitat.



Try these alterNATIVES

Arizona rosewood *Vauquelinia californica*

Grows into an erect shrub up to 20 ft tall that can also be pruned into a tree. Rosewood is a good hedge for privacy and wind control. The bark is gray to reddish and leaves are evergreen. It blooms in late spring with a 3 in cluster of tiny white flowers. Rosewood is a superb alternative to oleander as well.



Hop bush *Dodonaea viscosa*

At maturity, this evergreen shrub can reach 10 ft tall and wide. Small yellow flowers develop into attractive winged fruits that turn purplish in the fall. Quail and doves relish hop bush seeds. When planted 6-8 ft apart, hop bush creates an informal screen.



Quail bush *Atriplex lentiformis*

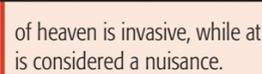
A fast growing, rounded shrub up to 8 ft tall and 12 ft wide. Blue-gray leaves of variable shape offset clusters of tiny greenish flowers that appear in late winter through spring. The fruit and seeds attract birds. Quail bush grows in most soil types and can be used for screening.



Tree of heaven

Ailanthus altissima
INVASIVE WEED

This fast-growing, prolific seed producer easily resprouts and quickly multiplies. Tree of heaven competes with surrounding plants for resources, has an unpleasant odor, and produces toxins that inhibit the growth of nearby plants. The toxins may be poisonous to wildlife and humans. At mid-elevations (3000-5000 ft), tree of heaven is invasive, while at lower elevations in urban areas, it is considered a nuisance.

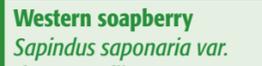
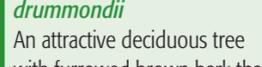
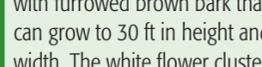
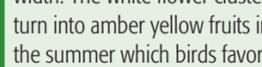
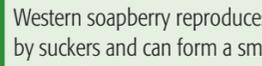
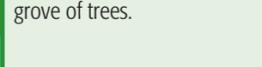



Try these alterNATIVES

Western soapberry

Sapindus saponaria var. *drummondii*

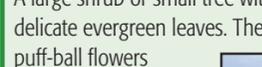
An attractive deciduous tree with furrowed brown bark that can grow to 30 ft in height and width. The white flower clusters turn into amber yellow fruits in the summer which birds favor. Western soapberry reproduces by suckers and can form a small grove of trees.

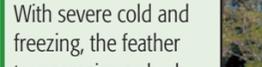
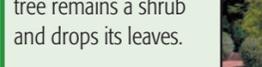
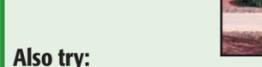







Feather tree

Lysiloma watsonii

A large shrub or small tree with fern-like, delicate evergreen leaves. The creamy white puff-ball flowers become attractive dark-brown flat pods. With severe cold and freezing, the feather tree remains a shrub and drops its leaves.

Also try:

Velvet ash *Fraxinus velutina*
Arizona walnut *Juglans major*

Both are riparian deciduous trees that need supplemental water.

African sumac

Rhus lancea
INVASIVE WEED

A widely promoted low water use landscape tree that threatens riparian areas by diverting channel flow, thus enhancing the potential for streambank erosion, and it can displace mesquites. Besides producing abundant seeds, it also spreads by suckers and competes with native plants for water.





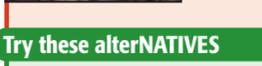


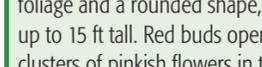
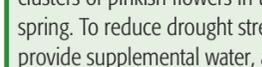
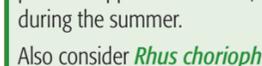
Try these alterNATIVES

Sugar sumac

Rhus ovata

A deep evergreen shrub with dense foliage and a rounded shape, growing up to 15 ft tall. Red buds open into clusters of pinkish flowers in the spring. To reduce drought stress, provide supplemental water, and shade during the summer.



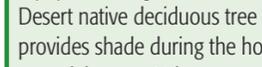
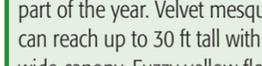
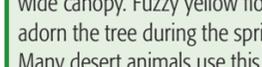
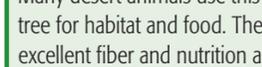
Also consider *Rhus choriophylla*.

Velvet mesquite

Prosopis velutina

A popular drought-tolerant Sonoran Desert native deciduous tree that provides shade during the hottest part of the year. Velvet mesquites can reach up to 30 ft tall with a wide canopy. Fuzzy yellow flowers adorn the tree during the spring. Many desert animals use this tree for habitat and food. The pods provide excellent fiber and nutrition and can be ground into a sweet, healthy flour.



Although native mesquites are thorny when young, the thorns of mature trees are small. Avoid South American mesquite varieties, they have even larger thorns and tend to blow over due to their shallow roots.

Salt cedar or tamarisk

Tamarix sp.
INVASIVE WEED

Extremely invasive and threatens fragile riparian corridors across the southwest. Tamarisk reduces native seed germination because of the salts it concentrates on the soil surface. Tamarisk outcompetes and eventually replaces cottonwoods, willows, and mesquite, which in turn impacts wildlife habitat. Not commonly sold, but occasionally available.





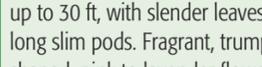
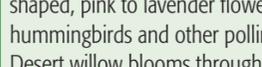
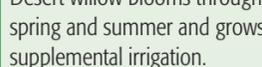
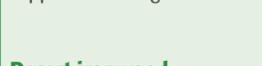


Try these alterNATIVES

Desert willow

Chilopsis linearis

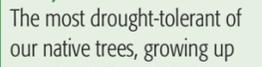
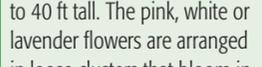
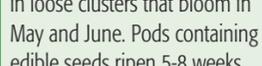
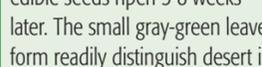
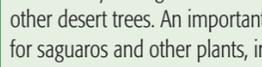
A deciduous willow-like tree growing up to 30 ft, with slender leaves and long slim pods. Fragrant, trumpet-shaped, pink to lavender flowers attract hummingbirds and other pollinators. Desert willow blooms throughout the spring and summer and grows fast with supplemental irrigation.

Desert ironwood

Olneya tesota

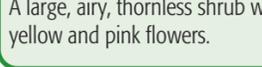
The most drought-tolerant of our native trees, growing up to 40 ft tall. The pink, white or lavender flowers are arranged in loose clusters that bloom in May and June. Pods containing edible seeds ripen 5-8 weeks later. The small gray-green leaves and upright form readily distinguish desert ironwood from other desert trees. An important "nurse" tree for saguaros and other plants, ironwoods also provide shade for desert animals.

Also try:

Baby bonnets *Coursetia glandulosa*

A large, airy, thornless shrub with delicate pea-shaped white, yellow and pink flowers.

Vinca or periwinkle

Vinca major
INVASIVE WEED

Like many invasive plants, its beauty is deceiving. Vinca is an aggressive groundcover with trailing stems that root wherever they touch the soil. It also resprouts from stem fragments, enabling it to spread rapidly along creeks and moist drainages, where it competes for resources and smothers native vegetation.



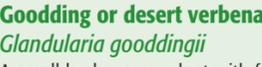
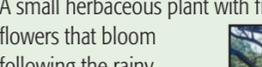
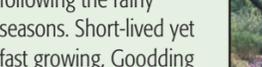
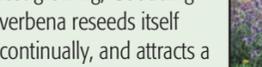


Try these alterNATIVES

Goodding or desert verbena

Glandularia gooddingii

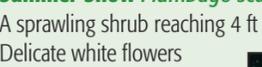
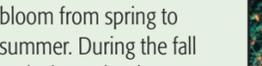
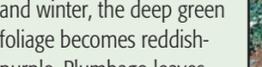
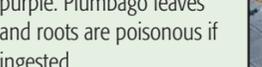
A small herbaceous plant with fragrant lavender flowers that bloom following the rainy seasons. Short-lived yet fast growing, Goodding verbena reseeds itself continually, and attracts a variety of butterflies.


Summer Snow

Plumbago scandens

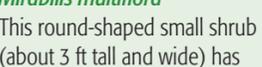
A sprawling shrub reaching 4 ft tall and wide. Delicate white flowers bloom from spring to summer. During the fall and winter, the deep green foliage becomes reddish-purple. Plumbago leaves and roots are poisonous if ingested.

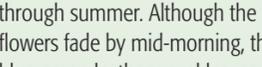
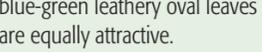






Desert four o'clock

Mirabilis multiflora

This round-shaped small shrub (about 3 ft tall and wide) has marvelous reddish-purple flowers that bloom late spring through summer. Although the flowers fade by mid-morning, the blue-green leathery oval leaves are equally attractive.

A native water feature



Keep it Native in your Backyard Ponds!

Everyone loves backyard ponds and water gardens; luxurious oases in a desert landscape. However, many aquatic and wetland plants that are popularly used in backyard ponds can be highly invasive and have the potential to further threaten Arizona's already imperiled riparian areas.

Heavy rains can wash plant parts from our ponds and carry them off where they may eventually reach a wash or stream.

Also, avoid and watch out for invasive aquatic animals such as bullfrogs, mosquito fish, and crayfish. These species readily invade natural areas and destroy native plants and animals by eating them and introducing diseases. Non-native turtles from pet stores are also harmful when they escape or are released into natural areas. Never release any pet into the wild: it is against the law, inhumane to the pet, and dangerous to native species.

If you suspect you have non-native invasive critters in your pond, contact the Arizona Game and Fish Department (602-789-3500) for guidance.



Bullfrogs are not native to the southwest. In wet weather they can travel miles. They quickly take over wetlands eating any animal they can fit into their mouths.



Before Crayfish



After Crayfish

Crayfish, also known as crawdads, eat aquatic plant and animal life, including ornamental plants, snails, tadpoles, frogs, baby turtles and fish. They also cloud water by destroying the plants that filter and oxygenate a pond or stream.

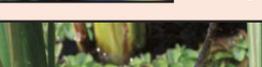
Aquatic Plants

Aquatic plants to avoid include:

Parrot-feather
Myriophyllum aquaticum

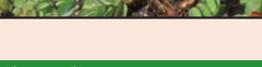
Native to South America, has naturalized worldwide escaping from water gardens and fish tanks.





Giant salvinia *Salvinia molesta*

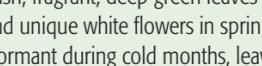
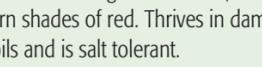
This highly invasive plant has caused millions of dollars worth of damage in many countries around the world.


Try these alterNATIVES

Also avoid:

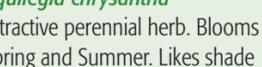
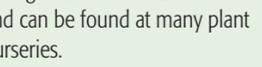
Water thyme
Hydrilla verticillata
Mosquito fern *Azolla pinnata*

Yerba mansa

Anemopsis californica

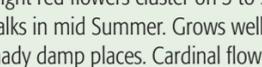
Lush, fragrant, deep green leaves and unique white flowers in spring. Dormant during cold months, leaves turn shades of red. Thrives in damp soils and is salt tolerant.

Yellow Columbine

Aquilegia chrysantha

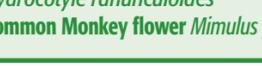
Attractive perennial herb. Blooms Spring and Summer. Likes shade and can be found at many plant nurseries.


Cardinal flower *Lobelia cardinalis*

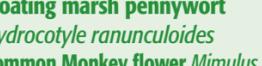
Bright red flowers cluster on 3 to 5 ft stalks in mid Summer. Grows well in shady damp places. Cardinal flower is a favorite hummingbird plant.





Also try:

Horsetail *Equisetum laevigatum*
Floating marsh pennywort *Hydrocotyle ranunculoides*
Common Monkey flower *Mimulus guttatus*


Thank you to our supporters and partners!!

Content developed by a subcommittee of the AZ Native Plant Society with assistance from:

- California Invasive Species Council
- Desert Survivors Nursery
- Drylands Institute
- Gardening Insights, Inc.
- Tohono Chul Park
- University of AZ Herbarium & Desert Legume Program

Where to go for more information:

AZ Native Plant Society www.aznps.org
Native Plants for Southwestern Landscapes by Judy Mielke
 Center for Invasive Plant Management www.weedcenter.org
Desert Landscaping: Plants for a Water-Scarce Environment
 CD-ROM ag.arizona.edu/AZWATER/publications/cd/

Sources for native landscape plants:

- Mountain States Wholesale Nursery www.mswm.com
- Desert Survivors www.desertsurvivors.org
- Tohono Chul Park www.tohonochulpark.org/greenhouse.html

Ask for native plants at your local plant nursery

Este tambien esta disponible en Español/This brochure is also available in Spanish. To order or print this brochure visit: www.aznps.org/html/invasives.html