INVASIVE PLANTS AND WILDLAND HEALTH

Jason Casanova

Ailanthus and other invasive plants in stream bed.

Most plants don't escape our yards and gardens, but the handful that do can cause serious problems. Animals, wind, and water move plants and seeds far from where they were planted. Once established in natural areas, invasive plants displace native vegetation and greatly reduce the amount and quality of habitat for native wildlife. These plants can also fuel wildfires, contribute to soil erosion, clog streams and rivers, and increase flooding. Poor maintenance of cleared areas can promote their spread. Because they thrive in disturbed soils, improper clearance or over-clearance often leads to a landscape dominated by invasive plants. These species can produce more fuels than native vegetation, increasing the potential for ignition.

When choosing plants for your fire-safe landscape, you can help protect the health of neighboring wildlands by avoiding invasive species. Several of the worst offenders are described in this guidebook. You can find complete lists that were developed by the California Invasive Plant Council, at *www.cal-ipc.org* and the Los Angeles and San Gabriel Rivers Watershed Council, at *www.weedwatch.org*. Remember when buying plants to make sure to check the scientific name so that you are getting the species you want!

FEATURED PROBLEM PLANTS

On the following pages, we feature several plants that can have a negative impact on your landscape and the habitat around you. The symbols you'll find under this section represent the following plant characteristics:

Highly Flammable

Invasive

PROBLEM PLANTS

Castor Bean, Artichoke Thistle

Left: Castor Bean *(Ricinus communis)*
Right: Artichoke Thistle *(Cynara cardunculus)*

Michael Nickel

Clarence A. Rechenthin

Artichoke Thistle *(Cynara cardunculus)* is a spiny perennial herb with bright purple thistle flowerheads and an aggressive root system. The plant is known to spread along game trails in coastal sage scrub in Southern California. Castor Bean *(Ricinus communis)* is a perennial shrub with maple-like leaves and is found in riparian areas, chaparral, sage brush, and along roadsides. Castor Bean seeds are highly toxic to humans as well as many animals. Both plants can become dense monocultures that exclude shrubs, herbaceous plants, and annual grasses. They colonize disturbed areas and grow rapidly, shading out native seedlings and groundcovers. The best method of seedling control is by hand pulling with gloves when small or in wet soil. Mature plants may best be controlled with herbicide.

Large Periwinkle, Ivy

Left: Large Periwinkle *(Vinca major)*
Right: English Ivy *(Hedera helix)*

Drew Ready

Drew Ready

Large Periwinkle *(Vinca major)*, English Ivy, *(Hedera helix)*, Algerian Ivy *(Hedera canariensis)*, and Cape or German Ivy *(Delairia odorata)* are all vines, and they are all invasive in Southern California. Thick mats can be difficult to maintain, and can hide underlying dead, dry material, which can be a fire hazard. Small infestations of all of these can be effectively removed by hand-pulling. For non-invasive vine alternatives, try California Desert Grape *(Vitis girdiana)* or Beach Strawberry *(Fragaria chiloensis)* for an additional benefit: homegrown fruit. Star Jasmine *(Trachelospermum jasminoides)* is another good alternative. If you do opt for vines in wetter parts of your garden, make sure to keep them well watered, and trim back any dead material.

Left: Hottentot Fig, Highway Iceplant *(Carpobrotus edulis)*
Right: Crystalline Iceplant *(Mesembryanthemum crystallinum)*

Júlio Reis

Gary A. Monroe

Hottentot Fig or Highway Iceplant *(Carpobrotus edulis)* and Crystalline Iceplant *(Mesembryanthemum crystallinum)*, are groundcovers that invade coastal areas of Southern California. Both can spread to form nearly impenetrable, shallow-rooted mats that dominate native plant communities and do not prevent erosion. The woody thatch underlying these mats can also become a fire hazard if not maintained properly. Both plants are easily removed by repeated hand pulling. Large infestations may be best controlled with herbicide. A good alternative to consider is a mix of non-invasive succulents like Kleinia *(Senecio mandraliscae)* or Catalina Island Live-Forever *(Dudleya hassei)*. For hillsides try deep-rooted San Diego Marsh Elder *(Iva hayesiana)*.

PROBLEM PLANTS

Brooms (Scotch, Spanish)

Spanish Broom *(Spartium junceum)*
Left: plant close-up
Right: plant form

Jon M. Randall

Michael Nickel

Scotch Broom *(Cytisus scoparius)* is a small to medium sized shrub with sharply angled branches and golden yellow flowers. Spanish Broom *(Spartium junceum)*, is a perennial shrub with rush-like branches and light yellow flowers. They can be found throughout the southern coastal counties of California. Brooms tend to form dense stands and take over native plant communities, and infestations are fire hazards during the dry season. Pulling mature plants with weed wrenches is effective for removal combined with several years of follow-up seedling control. Western Redbud *(Cercis occidentalis)*, with its deep pink flowers in spring, is an attractive alternative, but as always, take care to space shrubs properly and cut back dead branches and twigs in fuel management zones.

Myoporum, Tree of Heaven

Left: Myoporum
(Myoporum laetum)
Right: Tree of Heaven
(Ailanthus altissima)

Carolyn Martus

Bill Neill

Myoporum *(Myoporum laetum)* is a small evergreen tree or shrub with a broadly spreading crown. Tree of Heaven *(Ailanthus altissima)* is a deciduous tree or shrub that can reach heights of 30-65 feet. It can create dense thickets and produce copious seeds, contributing to its ability to spread and crowd out native vegetation. Both Myoporum and Tree of Heaven grow and spread rapidly and have invaded significant areas along the coast of Southern California and along streams in riparian areas. Seedlings can be pulled by hand, but pulling must be done when the soil is moist and the plant is small, due to long, strong taproots. One alternative as a screen or tree is the Fern Pine *(Podocarpus gracilior)*.

Mexican Fan Palm

Mexican Fan Palm *(Washingtonia robusta)*
Left: plant form
Right: plant close-up

The Mexican Fan Palm *(Washingtonia robusta)* grows to 100 feet tall; the trunk is slightly curved or bent with compact bright green fan-shaped palm fronds. Mexican Fan Palms can form dense mature stands in river, stream and wetland areas. If not properly pruned, these palms hold on to their large collars of dried and highly flammable fronds. Many fire officials blame the rapid spread of the Old Fire in San Bernardino on Mexican Fan Palms. Removal of these palms is best when they are young, as they are costly to remove once they mature. Consider using the Guadalupe Palm *(Brahea edulis)* or the Mexican Blue Palm *(Brahea armata)* as a substitute for Mexican Fan Palms. They grow more slowly, stay smaller, and are not invasive.

PROBLEM PLANTS

Geraldton Carnation Spurge

Geraldton Carnation Spurge
(Euphorbia terracina)
Left: Plant Form
Right: Plant Close-up

Joseph DiTomaso

Joseph DiTomaso

Geraldton Carnation Spurge *(Euphorbia terracina)*, native to the Mediterranean, is a yellowish-green, bushy, upright perennial herb which grows up to 3 feet tall. It consists of several green to reddish, slender leafy stems which branch at the top to produce 1 to 5 flower stems. The plants spread by seed when the ripe fruits burst open. Geraldton Carnation Spurge has become established in coastal regions where it forms dense thickets that out-compete native species for space, light and nutrients. Brush cutting of mature stands (woody, several years old) seems to work if done after seed sets. Replace this plant with these alternatives: Bush Poppy *(Dendromecon rigida)* or Bush Marigold *(Tagetes lemmonii)*.

Mustard, Brome and Oat Grasses

Left: Mustard
(Brassica sp.)
Right: Brome and Oat Grass
(Bromus sp. and Avena sp.)

Joseph DiTomaso

Joseph DiTomaso

Invasive plants like Black Mustard, Common/Field Mustard, and Saharan Mustard *(Brassica nigra, B. rapa, and B. tournefortii)* are often miscontrued as harmless naturalized exotics. The same is true for the invasive grasses like Slender Oat, Wild Oat *(Avena barbata, A. fatua)* Cheatgrass, Red Brome/Foxtail Brome and Ripgut Brome *(Bromus tectorum, B. medritensis, and B. diandrus)*. Despite being here for over a century, these plants continue to have severe environmental impacts. Dense stands of these invaders suppress wildflowers and other low growing native plants. After fires, they monopolize available soil moisture before many natives have a chance to germinate and reestablish. They die out in the spring/early summer and have increased the ignition potential and fire frequency of our wildlands due to their fast burning fine fuels.

Eucalyptus Blue Gum

Eucalyptus *(Eucalyptus globulus)*
Left: plant close-up
Right:

Jon M. Randall

Jon M. Randall

Blue Gum *(Eucalyptus globulus)*, native to Australia, is a tall (100-180 foot), aromatic (flammable resins, gums), straight-growing tree, with bark that sheds in long strips, leaving contrasting smooth surface areas. Blue gum is distinguished by tall growth habit, smooth bark, long leaves, and large, solitary, waxy buds and fruits. Within groves, biological diversity is lost due to displacement of native plant communities and corresponding habitat. Eucalyptus is a highly flammable tree and should not be planted near wildlands. Seedlings can be hand pulled but mature tree removals should be left to a professional.
See the National Park Service Eucalyptus Newsletter *(http://www.nps.gov/goga/parkmgmt/fire_edu_newsletter_eucalyptus.htm)*.

PROBLEM PLANTS

Pines, Juniper, Cypress

Left: Castor Bean *(Ricinus communis)*
Right: Artichoke Thistle *(Cynara cardunculus)*

Drew Ready

J. E.(Jed) and Bonnie McClellan

Pines *(Pinus spp.)*, Junipers *(Juniperus spp.)* and Cypress *(Cupressus spp.)* species have characteristics that may make them highly flammable, such as the production of leaf litter or peeling bark, or the presence of volatile oils and resins. Though it may be possible to reduce their fire risk with frequent watering, intensive pruning, and wide spacing, it is recommended that these native species not be planted near homes in very high fire severity zones and care should be taken to remove them from the fuel management zone. Note that beyond the fuel management zone, the native species of these plants are important and attractive components of wildland ecosystems and provide habitat for native birds and wildlife. In Southern California these include: White Fir *(Abies concolor)*, Torrey Pine *(Pinus torreyana)*, Yellow Pine *(Pinus ponderosa)*, Coulter Pine *(Pinus coulteri)*, Grey Pine *(Pinus sabiniana dougl.)*, Tecate Cypress *(Cupressus forbesii)*, and California Juniper *(Juniperus californica)*.

Pampas Grass, Jubata Grass, Crimson Fountain Grass

Left: Fountaingrass *(Pennisetum setaceum)*
Right: Pampasgrass *(Cortaderia selloana)*

Pampasgrass *(Cortaderia selloana)*, Jubatagrass *(C. jubata)* and Fountaingrass *(Pennisetum setaceum)*, are non-native perennial grasses with a clumped, upright growth pattern and feathery flower heads. These grasses create a fire hazard with excessive build-up of dry leaves and flowering stalks. Heavy infestations compete with native vegetation. Fountaingrass increases fire risk and endangers native plant communities. It is well adapted to fire and soil disturbance and infestation areas can greatly increase following a burn. Small infestations of Pampasgrass and Fountaingrass seedlings can be removed by hand-pulling. Mature plants may be best controlled with appropriate herbicides.
An attractive native alternative is Deergrass *(Muhlenbergia rigens)*, but make sure to follow proper spacing and trim back dead material in your defensible space areas.

Arundo, Tamarisk

Left: Arundo *(Arundo donax)*
Right: Tamarisk *(Tamarix ramosissima)*

Bill Neill

Carolyn Martus

Arundo *(Arundo donax)* and Saltcedar or Tamarisk *(Tamarix spp.)* are two of the most devastating plants invading rivers, streams and wetlands in Southern California. Arundo can reach heights of 30 feet, forming dense stands that crowd out native plants and degrade wildlife habitat. It produces a massive amount of dormant dry vegetation in streams. This poses a serious fire risk. In large storm events clumps dislodge, accumulate downstream, and increase the risk of flooding. Small pieces that break off often re-sprout, spreading the infestation. Tamarisk is a large, many-branched shrub or tree with very small, scale-like leaves and is found in streamside and wash areas of California. It has a high capacity for water use, and can cause a reduction in groundwater supplies. It often spreads rapidly after a major disturbance, such as a fire. Removal of both Arundo and Tamarisk is difficult, as all root material must be killed or removed to avoid resprouting.