

A Builder and Contractor's Guide to Preventing the Introduction and Spread of Invasive Weeds

What Every Construction, Utility & Landscaping Professional Needs to Know About Invasive Plants



Hoary cress (above) and Oblong spurge (right).



Invasive weeds are damaging our parks, farmland, forests and natural areas. Contractors, landscapers, builders, and road and utility management and crews can play a critical role in stopping their introduction and spread.

The most effective, economical, and ecologically sound method of managing invasive plants is to prevent their invasion in the first place. Too often, landowners and land managers pour resources into fighting weeds after they are firmly established. In such cases, control is extremely expensive and eradication is often no longer feasible. Resources

can be spent more efficiently on proactive weed management activities that focus on prevention of new invasions.

Invasive weed seeds and root fragments can be moved to a construction site on equipment or tires, in gravel or fill materials, or in erosion control materials and mulch. Seeds or root fragments can then reproduce, especially in disturbed areas which favor invasive weed development. The best defenses against invasive weeds are prevention of introductions and early detection and eradication, before new infestations get established.



Understanding the Problem...

Invasive plants, otherwise known as invasive weeds, are a serious problem in California and the United States, causing billions of dollars in damages annually to agricultural, forestry, recreational and tourist industries. Invasive weeds are characteristically non-native, adaptable, aggressive plants that have a high reproductive capacity. Plants like yellow starthistle, spotted knapweed, Scotch broom and tree-of-heaven are crowding out native plants

and reducing the productivity of range and farmlands. Invasive weeds change the structure of soil, alter water flows and conditions, reduce the food and shelter available for wildlife, reduce forest regeneration, change fire regimes and disrupt recreational experiences. Human and animal health can also be harmed by invasive plants.

Thousands of plant species have been brought to North America in the past three centuries. Most are well-behaved, rarely invading

natural and agricultural areas. A few, however, do not have the natural enemies from their native

homelands to keep them in check, allowing them to out-compete our native plants and farm crops.

To prevent the introduction and establishment of invasive plants during construction and landscaping projects, a proactive plan should include:

- *limiting the introduction of weed seeds and plant parts into an area;*
- *managing land to build and maintain healthy communities of native and desirable plants to compete with weeds;*
- *early detection and eradication of small patches of weeds; and*
- *evaluating annually the effectiveness of the prevention plan so appropriate steps can be taken the following year.*

Best Management Guidelines for Construction, Utility and Landscaping Projects



For all types of projects:

- Learn to identify invasive *and* desirable plants. Incorporate weed prevention and control into project layout, design, implementation and evaluation.
- If possible, identify and eradicate weeds from the site before the project begins.
- Avoid creating environmental conditions that promote weed germination and establishment:
 - Minimize soil disturbance.
 - Retain shade to the extent possible to suppress weeds.
 - Retain native vegetation and topsoil as much as possible.
- Locate and use weed-free equipment staging areas.
- Begin project operations in non-infested areas, and then move to infested areas.
- Identify sites where equipment can be cleaned. Remove mud, dirt, and plant parts from project equipment **before moving into** a project area. Seeds and plant parts should be collected and incinerated or bagged and sent to a landfill.
- Inspect, remove, and properly dispose of weed seed and plant parts found on clothing and equipment **before leaving** an infested project site.
- Use weed-free sand, gravel, and fill material; inspect materials at the source.
- Revegetation can discourage weed growth:
 - Use local seeding guidelines and certified weed-free seed mixes.
 - Consider chipping local brush for mulch – an added benefit is that mature seeds in the brush can help restore localized vegetation on the site.
 - Use certified weed-free hay or straw.
- Inspect and document all ground-disturbing projects for at least three growing seasons following completion of the project. Weed management is a long-term process. Weed seeds often last 5 to 50 years in the soil and pieces of root as small as 1/2" can start a new plant and a new infestation. Plan for follow-up treatments if weeds are detected.
- Educate staff and crews in weed identification, biology, impacts, and prevention measures.
- Set the example—maintain weed-free administrative sites.

For land subdivision construction projects also consider:

- Develop weed management guidelines or a weed prevention plan for the entire subdivision rather than individual lots.
- Include building contractors, utilities, and others in requirements to clean equipment and use weed-free materials.
- Develop standards for grazing, landscaping, and revegetation that promote healthy plant communities.
- Develop road maintenance plans that address weed management along roadsides to reduce the spread of weeds throughout the subdivision.

For road and utility projects also consider:

- Incorporate weed prevention into road and utility project layout, design, evaluation, and decisions.
- Develop Best Management Practices for material stockpile sites, sand and gravel pits, mulch, and other material source sites.
- Train road maintenance staff and utility truck operators to recognize weeds and report locations to weed specialist within your company.
- Schedule roadside mowing so weed-free roadsides are mowed after seed maturation, ensuring desirable plants grow unrestricted and produce seed for next year's

stand. Weedy roadsides should be treated when the weeds have reached the early flowering stage (well before seed development) to avoid spreading matured weed seed.

- Coordinate blading or pulling of noxious weed-infested roadsides or ditches with the weed specialist within your company. Blade from least infested to most infested areas. Ensure weeds remain on-site.

For landscaping projects also consider:

- Some landscaping and garden plants have “jumped the fence” and invaded natural areas and agricultural lands. Learn which landscaping plants are considered invasive in your area and replace them with non-invasive alternatives (see table below).
- Limit the use of fertilizers; over-fertilizing encourages invasive weeds.
- Promote invasive weed management to homeowners and other landowners.



Alternatives to Invasive Plants

	Invaders	Alternatives
Groundcovers	Periwinkle/Vinca major, English and Algerian ivy	Star jasmine, yarrow, cinquefoils, pachysandra, creeping mahonia, ajuga
Grasses and Screens	Green fountaingrass, pampasgrass, giant reed/arundo	Deer grass, New Zealand flax, bamboo (clumping varieties only), California fescue, blue oat grass
Shrubs	Brooms: Scotch, French and Spanish, scarlet wisteria/rattlebox	Forsythia, potentilla, sticky monkey flower, redbud, toyon, strawberry tree
Trees	Chinese tallowtree, tree-of-heaven/alanthus, tamarisk	Crape myrtle, California black walnut, white alder, mountain ash

El Dorado County Priority Invasive Weed Species



Spotted
knapweed.

New invaders: report and eradicate

Canada thistle
Cirsium arvense
Dalmatian toadflax
Linaria genistifolia
ssp. *dalmatica*
Diffuse knapweed
Centaurea diffusa
Hoary cress
Cardaria draba
Lens-podded whitetop
Cardaria chalepensis
Oblong spurge
Euphorbia oblongata
Purple loosestrife
Lythrum salicaria
Rush skeletonweed:
control at 3500 ft.
elevation and higher
Chondrilla juncea
Scarlet wisteria/rattlebox
Sesbania punicea
Spotted knapweed
Centaurea biebersteinii
Tall whitetop/perennial
pepperweed
Lepidium latifolium
Tamarisk/saltcedar
Tamarix spp.
Yellow starthistle:
control at 3500 ft.
elevation and higher
Centaurea solstitialis

Common Invasive Weeds: control isolated populations to prevent further spread

Arundo/Giant reed
Arundo donax
Brooms
Scotch – *Cytisus*
scoparius,
French – *Genista*
monspessulana and
Spanish – *Spartium*
junceum
Fennel
Foeniculum vulgare



Diffuse knapweed.

Other Species of Concern: increase public awareness and encourage control efforts

Bull thistle
Cirsium vulgare
Goatgrass
Aegilops triuncaialis
Hedge parsley/beggar's
lice
Torilis arvensis
Himalaya blackberry
Rubus discolor
Italian thistle
Carduus
pycnoccephalus
Johnsongrass
Sorghum halepenses
Klamathweed
Hypericum perforatum
Medusahead
Taeniatherum caput
medusae
Pampasgrass
Cortaderia selloana
Puncture vine
Tribulus terrestris
Tocalote
Centaurea melitensis
Tree of Heaven
Ailanthus altissima
White sweetclover
Melilotus alba Medic.
Yellow starthistle
Centaurea solstitialis
Yellow sweetclover
Melilotus officinalis (L.)
Lam.

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September 2003.

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Center for Invasive Plant
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*Best Management Practices
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For more information on
invasive weeds or the El
Dorado County Invasive
Weeds Management Group
contact UCCE (530) 621-
5502 or <http://ucanr.org/edc>
invasive weeds; to report a
Group 1 priority invasive
weed species, contact the El
Dorado County Department
of Agriculture
(530) 621-5520 or by email at
eldcag@co.el-dorado.ca.us

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