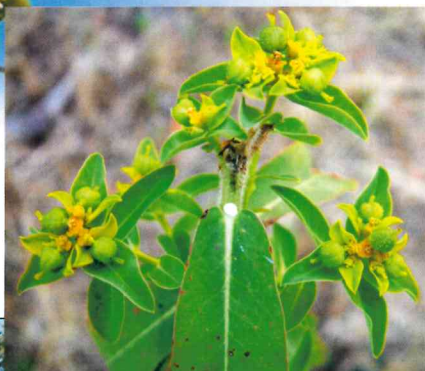


# A Builder and Contractor's Guide to Preventing the Introduction and Spread of Invasive Weeds

## 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. Weeds seeds often last 5 to 50 years in the soil and pieces of root as small as ½” 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
<b>Groundcovers</b>	Periwinkle/Vinca major, English and Algerian ivy	Star jasmine, yarrow, cinquefoils, pachysandra, creeping mahonia, ajuga
<b>Grasses and Screens</b>	Green fountaingrass, pampasgrass, giant reed/arundo	Deer grass, New Zealand flax, bamboo (clumping varieties only), California fescue, blue oat grass
<b>Shrubs</b>	Brooms: Scotch, French and Spanish, scarlet wisteria/rattlebox	Forsythia, potentilla, sticky monkey flower, redbud, toyon, strawberry tree
<b>Trees</b>	Chinese tallowtree, tree-of-heaven/althaus, 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 chalapensis*  
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 pycnocephalus*  
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.)  
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Published by the  
**El Dorado County Invasive  
Weed Management Group**  
Funded by the California  
Department of Food and  
Agriculture - Weed  
Management Area Grant  
Compiled by Wendy West,  
University of California  
Cooperative Extension

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](mailto:eldcag@co.el-dorado.ca.us)

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