This WEED REPORT does not constitute a formal recommendation. When using herbicides always read the label, and when in doubt consult your farm advisor or county agent.

This WEED REPORT is an excerpt from the book *Weed Control in Natural Areas in the Western United States* **and is available wholesale through the UC Weed Research & Information Center (wric.ucdavis.edu) or retail through the Western Society of Weed Science (wsweedscience.org) or the California Invasive Species Council (cal-ipc.org).**

Dipsacus fullonum L.; common teasel
Dipsacus laciniatus L.; cutleaf teasel
Dipsacus sativus (L.) Honck.; Fuller's teasel

Common, cutleaf, and Fuller's teasel

Family: Dipsacaceae
Range: Common teasel is present in all western states, but Fuller's teasel is only found in Oregon and California, and cutleaf teasel is only found in Oregon and Colorado within the western U.S.
Habitat: Open, sunny sites that range from wet to dry. However, these species generally grow in relatively moist situations along ditches, waterways, roads, and riparian zones. They are also found in pastures, abandoned fields, waste places, and forests, and are capable of invading healthy perennial grass stands in moist areas.
Origin: All species are native to Europe. Dried teasel heads are sometimes used in floral arrangements. Fuller's teasel heads were used in wool "fleecing" before metal carding combs were created. Common teasel is thought to be the wild ancestor of Fuller's teasel.
Impacts: Teasel species are spreading rapidly throughout western United States, especially in the Pacific Northwest. They are aggressive competitors capable of forming dense stands. Mature plants are too prickly and bitter to be eaten by most wildlife and livestock.
Western states listed as Noxious Weed: *D. fullonum*, Colorado, New Mexico, Washington (proposed); *D. laciniatus*, Colorado, Oregon
California Invasive Plant Council (Cal-IPC) Inventory: *D. fullonum* and *D. sativus*, Moderate Invasiveness

The teasels are biennials, annuals or short-lived perennials that can grow over 6 ft tall. The stems are coarse, straight, and ridged with stiff prickles. The branches are opposite and ascending. The rosette leaves are veined, wrinkled in appearance, with stiff prickles on the lower midrib. Stem leaves are opposite, sessile, fused at the base, lanceolate. Rosettes quickly form a strong, thick, fleshy taproot.

Teasels are easily identified by their unique flower head and bracts. The heads are terminal, egg-shaped, 1.5 to 4 inches long, and have receptacle bracts below flower heads that are often longer than the flower. Reproduction is only from seed. A plant can produce more than 2,000 seeds, of which 30% to 80% may germinate the following spring. Seed dispersal is primarily near the parent plant. Seeds can remain viable for at least 2 years.

NON-CHEMICAL CONTROL

Mechanical (pulling, cutting, disking)	Annual control treatments are usually needed for 4 to 6 years until viable seeds in the soil become sparse. With small infestations, digging or hand-pulling before flowering are effective controls. When digging, sever the root below the soil surface. Mowing is often ineffective because the root crown will resprout and flower after being cut. Repeated mowing can be effective but must be done often enough to prevent flowering regrowth. Tillage effectively controls emerged plants but can stimulate new germination.
Cultural	Livestock may graze rosettes, but teasel has low palatability at most growth stages.

	Fire is not an effective control and often stimulates teasel density the following season. Fire can be used to remove old growth and make teasel rosettes easier to target with herbicide applications. Promoting competitive vegetation can slow spread and help prevent establishment.
Biological	No known biological controls agents are available for the control of any species of *Dipsacus*, but USDA has recently initiated a biological control program.

CHEMICAL CONTROL

The following specific use information is based on published papers and reports by researchers and land managers. Other trade names may be available, and other compounds also are labeled for this weed. Directions for use may vary between brands; see label before use. Herbicides are listed by mode of action and then alphabetically. The order of herbicide listing is not reflective of the order of efficacy or preference.

GROWTH REGULATORS	
2,4-D Several names	**Rate:** 1 to 2 qt product/acre (0.95 to 1.9 lb a.e./acre) **Timing:** Postemergence. Most effective on small rosettes. **Remarks:** 2,4-D is often tank-mixed with chlorsulfuron or dicamba. It is available in a premix with picloram (*Grazon P+D*). Control has been inconsistent when used alone. It is broadleaf-selective and safe on most grasses. 2,4-D has minimal soil activity. Do not apply ester formulation when outside temperatures exceed 80°F. Amine forms are as effective as ester forms for small rosettes, and amine forms reduce the chance of off-target movement.
Aminocyclopyrachlor + chlorsulfuron *Perspective*	**Rate:** 4.75 to 8 oz product (*Perspective*)/acre **Timing:** Postemergence and preemergence. Postemergence applications are most effective when applied to plants from the seedling to the bolting stage. **Remarks:** Aminocyclopyrachlor provides excellent control of teasel at most growth stages. *Perspective* provides broad-spectrum control of many broadleaf species. Although generally safe to grasses, it may suppress or injure certain annual and perennial grass species. Do not treat in the root zone of desirable trees and shrubs. Do not apply more than 11 oz product/acre per year. At this high rate, cool-season grasses will be damaged, including bluebunch wheatgrass. Not yet labeled for grazing lands. Add an adjuvant to the spray solution. This product is not approved for use in California and some counties of Colorado (San Luis Valley).
Aminopyralid *Milestone*	**Rate:** 4 to 7 oz product/acre (1 to 1.75 oz a.e./acre) **Timing:** Postemergence from the rosette to young bolting stage. **Remarks:** Aminopyralid provided over 90% control when applied to rosettes in university trials. Longer soil residual activity compared to clopyralid. It is safe on most grasses, although preemergence application at high rates can greatly suppress some annual grasses, such as medusahead. Applications can decrease seed production in some annual and perennial grass species. For postemergence applications, adding a non-ionic surfactant (0.25 to 0.5% v/v spray solution) enhances control under adverse environmental conditions; however, this is not normally necessary. Other premix formulations of aminopyralid can also be used for control. These include *Opensight* (aminopyralid + metsulfuron; 2 to 3 oz product/acre) and *Forefront HL* (aminopyralid + 2,4-D; 1.5 to 2.1 pt product/acre).
Clopyralid *Transline*	**Rate:** 0.67 to 1.33 pt product/acre (4 to 8 oz a.e./acre). **Timing:** Postemergence from the rosette to young bolting stage. Results are best if applied to rapidly growing weeds. **Remarks:** Clopyralid is most effective for young plants. It has a shorter soil residual activity than aminopyralid or aminocyclopyrachlor. Trials indicate that it provides over 90% control when applied to rosettes. It controls or injures plants in the Asteraceae and Fabaceae but is safe on most other broadleaf species and all grasses. For postemergence applications, a non-ionic surfactant (0.25 to 0.5% v/v spray solution) enhances control under adverse environmental conditions; however, this is not normally necessary.
Clopyralid + 2,4-D *Curtail*	**Rate:** 2 to 4 qt *Curtail*/acre **Timing:** Same as for clopyralid. **Remarks:** Add a non-ionic surfactant.

Dicamba *Banvel*, *Clarity*	**Rate:** 2 pt product/acre (1 lb a.e./acre). Use higher rates for larger plants. **Timing:** Postemergence from rosette to beginning of bolting, or fall rosette stage. **Remarks:** Dicamba is a broadleaf-selective herbicide often combined with other active ingredients. In university trials, aminopyralid or clopyralid resulted in better control 1 year after treatment compared to dicamba used alone. Dicamba can be mixed with 2,4-D (0.5 to 1 pt dicamba + 2 pt 2,4-D/acre) from the rosette to bolting stage. Dicamba is available mixed with diflufenzopyr in a formulation called *Overdrive*. This has been reported to be effective on teasels. Diflufenzopyr is an auxin transport inhibitor which causes dicamba to accumulate in shoot and root meristems, increasing its activity. *Overdrive* is applied postemergence at 4 to 8 oz product/acre to rapidly growing plants. Higher rates should be used on large biennials. Add a non-ionic surfactant to the treatment solution at 0.25% v/v or a methylated seed oil at 1% v/v solution.
Fluroxypyr *Vista XRT*	**Rate:** 11 oz product/acre (3.4 oz a.e./acre) **Timing:** Postemergence from rosette to beginning of bolting, or fall rosette stage. **Remarks:** Fluroxypyr is broadleaf-selective and safe on most grasses.
Picloram *Tordon 22K*	**Rate:** 1 to 1.5 pt product/acre (4 to 6 oz a.e./acre) **Timing:** Postemergence during active growth before bud stage. **Remarks:** Most broadleaf plants are susceptible, but relatively safe on established grasses. Picloram has long soil residual activity and has been reported by some to injure young or germinating grasses. Picloram is a restricted use herbicide. Not registered for use in California.
AROMATIC AMINO ACID INHIBITORS	
Glyphosate *Roundup*, *Accord XRT II*, and others	**Rate:** 1 to 2 qt product (*Roundup ProMax*)/acre (1.1 to 2.25 lb a.e./acre). Spot treatment 1.5% v/v solution. **Timing:** Postemergence to rapidly growing plants from the rosette to early bolting stage. **Remarks:** Glyphosate will only provide control during the year of application; it has no soil activity and will not kill seeds or inhibit germination the following season. Glyphosate is nonselective. It can create bare ground conditions that make the area susceptible to weed recruitment. In areas with desirable vegetation, use spot treatment. Glyphosate is a good control option if reseeding is planned shortly after application, as it will not injure seedlings emerging after application. Add a surfactant if one is not already included in the herbicide formulation.
BRANCHED-CHAIN AMINO ACID INHIBITORS	
Chlorsulfuron *Telar*	**Rate:** 1 to 2.6 oz product/acre (0.75 to 1.95 oz a.i./acre) **Timing:** Postemergence from the rosette to bolting stage. **Remarks:** Always use a surfactant.
Imazapic *Plateau*	**Rate:** 8 to 12 oz product/acre (2 to 3 oz a.e./acre) **Timing:** Apply postemergence to rosettes. **Remarks:** Imazapic gives effective control with soil residual activity. It can be used in combination with glyphosate (premix trade name of *Journey*). Imazapic is safe on most native grasses. Higher rates may suppress seedings of some cool-season grasses. Add a methylated seed oil. Imazapic is not registered for use in California.
Metsulfuron *Escort*	**Rate:** 1 to 2 oz product/acre (0.6 to 1.2 oz a.i./acre) **Timing:** Postemergence from the rosette to bolting stage. **Remarks:** Metsulfuron has similar activity compared to chlorsulfuron. Metsulfuron has some soil residual activity. Always use a surfactant. Other premix formulations of metsulfuron can be used at the same application timing. These include *Chaparral* (aminopyralid + metsulfuron) at 2 to 3 oz product/acre, *Cimarron Max* (metsulfuron + dicamba + 2,4-D) at 0.5 oz + 2 pt product/acre, and *Cimarron X-tra* (metsulfuron + chlorsulfuron) at 2 oz product/acre. Metsulfuron is not registered for use in California.

RECOMMENDED CITATION: DiTomaso, J.M., G.B. Kyser et al. 2013. *Weed Control in Natural Areas in the Western United States*. Weed Research and Information Center, University of California. 544 pp.