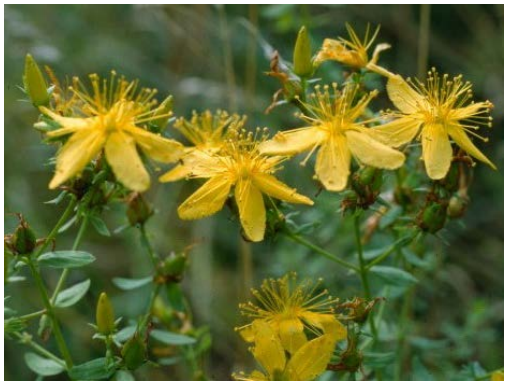
Hypericum perforatum L.

Common St. Johnswort (Klamathweed)



Family: Clusiaceae or Hypericaceae
Range: Nearly all of the contiguous states, including most western states except for Arizona. Also found in Hawaii.
Habitat: Forest, woodland, rangeland, and prairie communities. Less commonly occurs in riparian areas. Often associated with disturbances caused by roads, logging, grazing, and fire.
Origin: Native to Europe, western Asia, and North Africa.
Impact: Common St. Johnswort is poisonous at all growth stages and may cause photosensitization in most livestock. Infestations decrease the amount of forage available in rangeland. Livestock avoid common St. Johnswort as long as adequate forage is available, although some grazing may occur in spring when the plants are young and succulent. Common St. Johnswort has long been cultivated for its medicinal properties as an antidepressant and antibiotic.
Western states listed as Noxious Weed: California, Colorado, Montana, Nevada, Oregon, South Dakota, Utah, Washington, Wyoming.
California Invasive Plant Council (Cal-IPC) Inventory: Moderate Invasiveness

Common St. Johnswort is an erect, herbaceous, tap-rooted perennial forb that is typically around 2 to 3 ft tall but under ideal conditions can grow up to 5 ft. One to 30 stems arise from a woody root crown. The stems are woody at the base and branched and leafy in the upper half. The leaves are linear and about 1 inch long by about 0.4 inch wide. They are opposite and lack a petiole. The foliage is dotted with tiny translucent and black oil glands that are most noticeable when held up to the light.

The flowers are yellow and about 0.8 inch wide with 5 petals and numerous stamens. Flowers occur in terminal clusters of 25 to 100 at the stem tips. The fruit is a sticky, many-seeded, 3-celled capsule that is 5 to 10 mm long. Common St. Johnswort spreads by seeds and rhizomes, but seeds are the primary mechanism of reproduction. Estimates of seed production vary, but range from about 15,000 to 34,000 seeds per plant. Common St. Johnswort seed generally fall below the parent plant, but can be dispersed longer distances by water. Seeds of *Hypericum* species may remain viable in the soil for periods longer than 50 years.

NON-CHEMICAL CONTROL

Mechanical (pulling, cutting, disking)	Given common St. Johnswort's deep taproot and ability to regenerate, hand-pulling or digging is only practical for very small isolated infestations. Mowing is ineffective because plants can resprout from underground root reserves. However, mowing can postpone or reduce seed drop and repeated mowing may deplete the underground root reserves. Results from Australia showed that mowing at two week intervals was effective especially when done in spring. Common St. Johnswort is not a problem in cultivated crops, indicating it does not tolerate tillage. However, tillage is not practical in most natural areas.
Cultural	Grazing for control of common St. Johnswort is generally not recommended because of the potential for livestock poisoning. Intensive grazing by goats, which are less susceptible to the poison, may help to keep common St. Johnswort density at low levels. Burning may kill top growth but may not damage the crown and root system and may stimulate common St. Johnswort to resprout. There is also evidence that fire stimulates common St. Johnswort seeds to

	germinate. In general, burning is not a recommended control measure as it generally encourages establishment of the plant. Some research has shown that mulching—cutting the plants down to 2 inches and covering them with tarpaper—has been effective.
Biological	Common St. Johnswort has been regarded as one of the success stories for biological control of weeds. The overall impact of common St. Johnswort has been reduced through biological control agents. However, they have not yet managed to reduce common St. Johnswort infestations to levels that do not cause unacceptable economic or environmental damage in some areas, and the weed has continued to spread. This may be due to climatic issues where the beetles are unable to reach high enough densities to result in an adequate level of control. In some areas where the beetles are well adapted, common St. Johnswort populations have been reduced 97 to 99%. In some cases, densities may be so low that the population of biocontrol agents cannot respond when the weed populations increase, and reintroduction of biocontrol agents may be necessary. The primary biological control agents include St. Johnswort or Klamathweed beetles (*Chrysolina hyperici* and *quadrigemina*). These leaf-feeding flea beetles provide excellent control in some areas. In addition, St. Johnswort root borer (*Agrilus hyperici*) also provides excellent control, whereas the St. Johnswort inchworm (*Aplocera plagiata*) and the St. Johnswort gall midge (*Zeuxidiplosis giardia*) provide only fair control.

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:** 2 to 4 pt product/acre (0.95 to 1.9 lb a.e./acre) **Timing:** Application postemergence to new seedlings is most effective, but if not possible apply before any blossoms open. **Remarks:** 2,4-D is broadleaf-selective and has no soil activity. It may require repeat applications. It is often tank mixed with other herbicides. It should be used with a surfactant. Do not apply ester formulations when outside temperatures exceed 80°F.
Aminopyralid *Milestone*	**Rate:** 5 to 7 oz product/acre (1.25 to 1.75 oz a.e./acre) **Timing:** Postemergence to rapidly growing plants before bloom. **Remarks:** Aminopyralid is broadleaf-selective and is safe on grasses, although preemergence application at high rates can greatly suppress invasive annual grasses, such as medusahead. 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. Other premix formulations of aminopyralid can also be used for common St. Johnswort control. These include *Opensight* (aminopyralid + metsulfuron; 2.5 to 3.3 oz product/acre) and *Forefront HL* (aminopyralid + 2,4-D; 2 pt product/acre), both applied at the rosette to bolting stages.
Picloram *Tordon 22K*	**Rate:** 1 to 2 qt product/acre (0.5 to 1 lb a.e./acre) **Timing:** Postemergence when the target plants are small and rapidly growing, preferably before bloom. **Remarks:** Most broadleaf plants are susceptible to picloram. Control using a lower rate may be improved by tank mixing with 0.5 to 1 lb a.e./acre 2,4-D. Although well-developed grasses are not usually injured by labeled use rates, some applicators have noted that young grass seedlings with fewer than four leaves may be killed. Do not apply near trees. *Tordon 22K* is a federally restricted use pesticide. Picloram is 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). Wiper treatment: 33 to 50% of concentrated product. **Timing:** Postemergence to rapidly growing plants at late bud to flowering stage. **Remarks:** Glyphosate is nonselective and has no soil activity. Long-term management will likely require additional treatments to control newly germinating plants the following season. It is generally used as part of a revegetation program or for spot treatment. Rope wick or sponge wick (wiper) applications have also

	been effective for common St. Johnswort control, while reducing damage to desirable vegetation.
BRANCHED-CHAIN AMINO ACID INHIBITORS	
Metsulfuron *Escort*	**Rate:** 1 oz product/acre (0.6 oz a.i./acre) **Timing:** Postemergence when the target plants are small and rapidly growing. **Remarks:** Metsulfuron has mixed selectivity but is generally safe on grasses. Use a non-ionic surfactant at 0.5% by volume surfactant. It can be tank-mixed with 2,4-D or aminopyralid (*Opensight*). Metsulfuron has some soil residual activity. It 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.