Robinia pseudoacacia L.

Black locust

Family: Fabaceae
Range: Most contiguous states, except Arizona.
Habitat: Disturbed places, sites near old habitations, roadsides, landscaped sites, and many natural communities, including riparian areas, canyon slopes, mixed conifer forests, floodplain forests and woodlands. Grows best on well-drained, neutral to mildly acidic, limestone soils. Tolerates some drought, fire, and temperatures as low as -33°F. Does not tolerate shade, salinity, or extended periods of excessive soil moisture.
Origin: Native to the eastern United States. Black locust was widely planted in the United States as a landscape ornamental and for its hard, rot-resistant wood. In many areas of the country, black locust has escaped cultivation and become invasive.
Impacts: Black locust produces numerous suckers from the roots, and forms dense clonal colonies that exclude native vegetation. Foliage, seeds, and especially bark are toxic to humans and livestock when ingested, but rarely fatal. Flowers are reported as non-toxic to slightly narcotic. Black locust flowers attract bees, but the seeds and foliage are poorly used by wildlife.
California Invasive Plant Council (Cal-IPC) Inventory: Limited Invasiveness

Black locust is a fast-growing deciduous tree to nearly 80 ft tall, with pinnate-compound leaves, highly fragrant, white, pea-like flowers, and creeping roots that sucker readily. The bark is light gray-brown, rough, and deeply furrowed. Some trees may have a pair of stout spines 0.5 to 1 inch long at the base of the leaf. The leaflets are ovate to oblong with a smooth margin and a minute bristle at the tip. Some cultivars lack spines on the twigs or have pinkish flowers.

Trees reproduce vegetatively from root sprouts and by seed. Reproduction by root suckers is more prevalent in natural areas. Suckers usually appear from both stump and roots in the fourth or fifth year. Suckering can be extensive especially after being cut or damaged. Seeds are produced in flat pods, light brown to nearly black, 2 to 4 inches long. The hard-coated seed can remain dormant for 10 years or more. Seeds typically germinate in spring and do not tolerate shade or compete well with established vegetation. Seedlings that establish on favorable sites can grow up to 3 ft per year. Saplings generally begin to fruit at 6 years of age.

NON-CHEMICAL CONTROL

Mechanical (pulling, cutting, disking)	There are no mechanical strategies effective for the control of mature black locust. Hand pulling can remove seedlings, but once underground creeping rhizomes have developed, this technique is generally not effective. Cutting or girdling will result in prolific root suckering. Repeated cutting of sprouts over multiple years may provide some control.
Cultural	A heavily shaded environment will reduce the establishment of black locust.
Biological	Black locust suffers considerable damage from insects, particularly the black locust borer, *Megacylline robinine*. However, no USDA biological control program for black locust has been attempted, and no USDA-approved biocontrol agents exist for this species.

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	
Aminopyralid *Milestone*	**Rate:** Broadcast foliar treatment: 7 oz product/acre (1.75 oz a.e./acre). Foliar spot treatment: 0.05 to 0.8% v/v solution. Total herbicide should not exceed 7 oz product/acre or 14 oz product/acre on half of the target area. Use higher rates for low volume treatments and lower rates when thoroughly wetting leaves. Cut stump treatment: 10% v/v *Milestone* in water. Basal bark treatment: 0.5 to 5% v/v *Milestone* in 95-99.5% oil carrier. Stem injection treatment: one cut per every 3 inches of stem diameter, and 1 ml of 10% v/v *Milestone* in water added to each cut. For clumps, one hack per every 6 inches of total stem diameter. Treat the largest stems. **Timing:** Postemergence foliar treatments are best when leaves are fully expanded. For cut stump, basal bark, and stem injection treatments, applications can be made at most times of the year, except when ground is frozen, but are best used in late summer or early fall, before leaf drop. **Remarks:** Aminopyralid provides preemergent and postemergent control of susceptible weeds, and will not damage desirable grasses growing nearby. Cut stump and basal bark applications are made as described for triclopyr. For stem injection treatments, be sure that each cut goes well into or below the cambium layer. Trees should not be cut for at least 1 month after basal bark and stem injection treatments. Aminopyralid can be used in a premix combination with triclopyr (*Capstone*) at 6 to 9 pt product/acre.
Clopyralid *Transline*	**Rate:** 1 to 1.3 pt product/acre (6 to 8 oz a.e./acre) **Timing:** Postemergence foliar treatments are best when leaves are fully expanded. **Remarks:** A broadleaf herbicide like picloram, but more selective. Very safe on grasses but will kill most legumes and many members of the Asteraceae. It has a relatively short residual activity.
Picloram *Tordon 22K*	**Rate:** Foliar spot treatment: 3% v/v solution provides good control of stems but vigorous suckers can develop. Efficacy is improved with the addition of 3 to 5 qt of *Garlon 4 Ultra* or 4 to 8 qt of *Garlon 3A*/acre. **Timing:** Postemergence at the end of summer to beginning of fall, but before leaf drop. **Remarks:** High rates of picloram can give long-term soil residual control for broadleaves. Picloram is a restricted use herbicide. It is not registered for use in California.
Triclopyr *Garlon 3A*, *Garlon 4 Ultra*, *Pathfinder II*	**Rate:** Low volume foliar treatment: 5% v/v solution of triclopyr and water plus 0.5% surfactant v/v to thoroughly wet all leaves. Cut stump treatment: 25% *Garlon 4 Ultra* in 75% oil carrier, or undiluted *Garlon 3A* or 50% *Garlon 3A* in water. Basal bark treatment: 20% *Garlon 4 Ultra* in 80% oil carrier, or *Pathfinder II* as a ready to use formulation. Basal cut stump treatment: 25% *Garlon 4 Ultra* in 75% oil carrier. **Timing:** Cut stump and basal bark treatments can be applied as long as the ground is not frozen, but are most effective in late summer or early fall, before leaf drop. **Remarks:** Triclopyr is a selective herbicide for broadleaf species and will not damage desirable grasses growing nearby. For cut stump treatments, cut stems horizontally at or near ground level, and immediately apply herbicide solution to cover the outer 20% of the stump face. Suckering from the roots typically occurs after cutting, but the treatment should control most resprouts. For basal bark treatment, spray the lower trunk, including the root collar, to a height of 12 to 15 inches from the ground; the spray should thoroughly wet the lower stem but not to the point of runoff. Trees should not be cut for at least 1 month following basal bark treatment.
AROMATIC AMINO ACID INHIBITORS	
Glyphosate *Roundup*, *Accord XRT II*, and others	**Rate:** Foliar treatment: 1 to 1.5% v/v solution of *Roundup ProMax* (or other trade name with similar concentration of glyphosate) to thoroughly wet all leaves. Low volume spot treatment: 4 to 7% v/v solution of *Roundup* (or other trade name) to wet 50% of the leaves. Cut stump treatment: undiluted *Roundup* (or other trade name) or 50% v/v in water. **Timing:** Postemergence foliar treatments are best when leaves are fully expanded. Suckering from the roots might occur the following year. For cut stump treatment, apply immediately after cutting;

	application in late summer, early fall or dormant season provides best control. **Remarks:** Glyphosate is a nonselective systemic herbicide. It gives good control with some resprouts. Trees should not be cut for at least 4 months after foliar treatments.
BRANCHED-CHAIN AMINO ACID INHIBITORS	
Imazapyr + glyphosate *Arsenal*, *Habitat* or *Polaris* + *Roundup* or other trade name Imazapyr + metsulfuron *Arsenal*, *Habitat* or *Polaris* + *Escort*	**Rate:** Low volume foliar treatment: 0.5 to 1% *Arsenal* + 2 to 3% *Rodeo* or 2.3 g/gallon *Escort* (0.08 oz/gal or 0.06% solution) **Timing:** Postemergence. Best when used in late summer to early fall, but before leaf drop. **Remarks:** Imazapyr is a soil residual herbicide and may result in bare ground around trees for some time after treatment. Metsulfuron is not registered for use in California.
PHOTOSYNTHETIC INHIBITORS	
Hexazinone *Velpar L*	**Rate:** Broadcast or basal-soil (to the soil beneath the target plant) treatment: 5 to 10 qt product/acre (1.25 to 2.5 lb a.i./acre) **Timing:** Apply to the soil below the target plants from late winter through summer. **Remarks:** Hexazinone is a residual herbicide applied as a broadcast or basal-soil treatment for brush control. High rates of hexazinone can create bare ground, so only use high rates in spot treatments.
Tebuthiuron *Spike 80DF*	**Rate:** Broadcast treatment: 2.5 lb product (*Spike 80DF*)/acre (2 lb a.i./acre) **Timing:** Soil treatments can be applied anytime except when the soil is frozen or saturated with moisture. Applications should be made before the start of spring growth or before expected seasonal rainfall. **Remarks:** Tebuthiuron is a surface applied, soil-active product intended for total vegetation control in non-cropland. For best control, do not disturb plants for 2 years after application.

ECOMMENDED 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.