Vinca major L.

Big periwinkle

Family: Apocynaceae
Range: Primarily California, but also Oregon, Washington, Idaho, Utah, Arizona, New Mexico and much of the southern and eastern United States.
Habitat: Riparian corridors, moist woodlands, forest margins, coastal habitats, and disturbed sites such as roadsides and old homesteads. Grows best under moist, shady conditions on sandy to medium loam soil, with acidic to neutral pH. Can also tolerate drought, full sun, heavy clay and slightly alkaline soils. Foliage is susceptible to frost damage.
Origin: Native to central Europe and the Mediterranean region. Introduced to the United States in the 1700s as an ornamental and for medicinal uses.
Impacts: Under favorable conditions, plants spread invasively and can develop a dense ground cover that outcompetes other vegetation in natural areas. Big periwinkle is becoming a dominant woodland understory in many areas of California. Infestations around old homesteads have been present for many years and serve as nurseries for further spread. Some plants in the dogbane (Apocynaceae) family are extremely toxic, although poisoning due to the ingestion of big periwinkle is poorly documented.
California Invasive Plant Council (Cal-IPC) Inventory: Moderate Invasiveness

Big periwinkle is an herbaceous perennial groundcover with milky sap, trailing stems to 3 ft long, and ascending to erect flower-bearing stems to 1.5 ft tall. The leaves are dark glossy green, 2 to 3 inches long, oval in shape and slightly pointed at the tip.

Big periwinkle produces showy lavender-blue funnel-shaped solitary flowers. However, the species is considered sterile with only a few documented seedlings encountered. Thus, reproduction occurs vegetatively from trailing stems that root at the tips and from stem fragments. Plants and stem fragments disperse through human activities, such as landscape plantings and careless disposal of yard waste. Under favorable conditions, stem cuttings left on the ground can take root. In riparian areas, water currents can fragment stems and carry them downstream where they may root if lodged in a suitable location.

NON-CHEMICAL CONTROL

Mechanical (pulling, cutting, disking)	Hand pulling is very effective if careful attention is paid to removing all stems, root nodes and stolons. Repeated removal efforts over multiple years may allow desirable vegetation to colonize the area. Because big periwinkle can resprout and establish from stem fragments, mowing or cutting is not recommended.
Cultural	Grazing is not considered an effective control option. The stems contain milky latex that makes the plant unpalatable to grazing and foraging animals. Burning is also not practical, nor is it an effective control tool for big periwinkle control.
Biological	Big periwinkle is still a very common urban ground cover. Thus, there are no biological control agents available for its 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	
Picloram *Tordon 22K*	**Rate:** Broadcast foliar treatment: 2 qt product/acre (1 lb a.e./acre) plus 0.25 to 0.5% v/v surfactant applied to thoroughly wet all leaves. **Timing:** Postemergence foliar treatments are best when plants are growing rapidly. **Remarks:** High levels of picloram can give long-term soil activity for broadleaves. Picloram is a restricted use herbicide. It is not registered for use in California.
Triclopyr *Garlon 4 Ultra*	**Rate:** Foliar treatment: 1.12 to 2.25 pt product/acre of *Garlon 4 Ultra* (0.56 to 1.12 lb a.e./ac) and water plus 1% v/v surfactant, applied to thoroughly wet all leaves. Low volume/thinline treatment: 25% v/v solution of *Garlon 4 Ultra* plus 20% v/v crop seed oil in water. Wiper treatment: 25% v/v solution of *Garlon 4 Ultra* plus 20% v/v ethylated crop oil in water. **Timing:** Postemergence when plants are growing rapidly. Applications in spring provide the best control. **Remarks:** Triclopyr is selective for broadleaf species and will not damage desirable grasses growing nearby. *Garlon 4 Ultra* is formulated as a low volatile ester. However, in warm temperatures, spraying onto hard surfaces such as rocks or pavement can increase the risk of volatilization and off-target damage.
AROMATIC AMINO ACID INHIBITORS	
Glyphosate *Roundup, Accord XRT II*, and others	**Rate:** Foliar treatment: 2.5 to 5 qt product (*Roundup ProMax*)/acre (2.8 to 5.6 lb a.e./acre) in water, applied to thoroughly wet all leaves. Low volume/thinline treatment: 25% v/v solution of *Roundup* (or other trade name) in water. **Timing:** Postemergence when plants are growing rapidly. Applications in late summer or early fall provide the best control. **Remarks:** Glyphosate is a nonselective systemic herbicide with no soil activity. It gives good control with some resprouts.
BRANCHED-CHAIN AMINO ACID INHIBITORS	
Imazapyr *Arsenal, Habitat, Stalker, Chopper, Polaris*	**Rate:** Foliar treatment: 2.25 to 4.5 pt product/acre of *Stalker* (0.56 to 1.12 lb a.e./acre) and water plus 1% v/v surfactant, applied to thoroughly wet all leaves. Low volume/thinline treatment: 25% v/v solution of *Stalker* plus 20% v/v ethylated crop oil in water. Wiper treatment: 25% v/v solution of *Stalker* plus 20% v/v ethylated crop oil in water. **Timing:** Postemergence when plants are growing rapidly. Best when used in late summer to early fall. **Remarks:** Imazapyr is a soil residual herbicide and may result in bare ground around plants for some time after treatment.

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.