Oxalis pes-caprae L.

Buttercup oxalis (Bermuda buttercup)

Family: Oxalidaceae
Range: In the western U.S., it occurs in California and Arizona.
Habitat: Coastal dunes, scrub, grasslands, oak woodlands, gardens, turf, urban areas, orchards, vineyards and agricultural fields. Grows in most environments and can tolerate many soil types. Grows in full sun in cool coastal areas, but inland it grows primarily in semi-shaded sites.
Origin: Native to South Africa and brought to North America as a garden ornamental.
Impacts: Buttercup oxalis is a major problem in field-grown flowers and in the home landscape, especially in groundcovers. In the last 10 years, this plant has spread extensively throughout California invading native coastal dunes and natural areas along the coast. Due to its extensive occurrence in yards and gardens, buttercup oxalis has the potential to rapidly spread via the production of bulbs and the movement of contaminated soils into adjacent natural areas. Plants contain variable quantities of soluble oxalates and can be lethally toxic to livestock when ingested in quantity.
California Invasive Plant Council (Cal-IPC) Inventory: Moderate Invasiveness

Buttercup oxalis is a low-growing perennial with clover-like leaves and yellow flowers. Plants grow from bulbs and produce a loose basal rosette of leaves to 14 inches tall. Stems are mostly below ground. Leaf stalks are 5 inches long with a trifoliate leaf, green to dark purple-tinged, 6 to 10 mm long, and 5 to 24 mm wide. Leaflets are glabrous to sparsely pubescent, broadly heart-shaped, often pubescent below, and typically folding downward at midday and at night. Small, whitish-brown bulblets develop on the stem at the base of the rosette of leaves, and new bulbs form underground along the rhizome. A plant forms about a dozen small bulbs per year, each less than 1 inch long. Slender white rhizomes are about 4 inches long with true roots growing upward from the mature bulb apex. The leaves and flowers develop from the top of the rhizome. A threadlike rhizome grows downward from the mature bulb base and produces a tuberous root with many fibrous roots below. Small bulbils develop in the leaf scale axils along the length of the threadlike rhizome. Bulbs and bulblets readily detach from rhizomes.

The flowers are bright yellow, 0.75 to 1.5 inches wide, and are borne on top of a leafless stalk rising 6 to 12 inches tall. Viable seed never has been documented in the United States, and rarely has it been seen anywhere else in the world. The foliage dies and the bulbs become dormant when temperatures rise in late summer. Plants reproduce vegetatively by bulbs and spread with cultivation, soil movement, intentional planting, and disposal of garden refuse and nursery soil.

NON-CHEMICAL CONTROL

Mechanical (pulling, cutting, disking)	Hand pulling can provide control but care must be taken to remove the entire plant, including underground rhizome and bulbs. Repeated pulling of the tops will deplete the bulb's carbohydrate reserves, but these efforts take years to be successful. Cultivation can provide control on new infestations. Repeated tillage is required to effectively control the bulbs.
Cultural	Grazing is not considered an effective control option. Plants contain variable quantities of soluble

	oxalates and can be lethally toxic to livestock when ingested in quantity. Burning is also not considered to be an effective control option.
Biological	There is currently no biocontrol agent available for the control of *O. pes-caprae* in North America. A potential biocontrol agent is *Klugeana philoxalis*, a larval feeder on shoots of *O. pes-caprae*, but no other information on this species is available.

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	
Fluroxypyr *Vista XRT*	**Rate:** 15 to 22 oz product/acre (5.3 to 7.7 oz a.e./acre) to thoroughly wet all leaves **Timing:** Early postemergence when plants are growing rapidly. **Remarks:** Fluroxypyr provides selective postemergent control of many annual and perennial broadleaf weeds. It has no soil activity.
Triclopyr *Garlon 4 Ultra*	**Rate:** 2 to 4 qt product/acre (2 to 4 lb a.e./acre) plus 0.25 to 0.5% v/v surfactant to thoroughly wet all leaves **Timing:** Postemergence when plants are growing rapidly. **Remarks:** Triclopyr is a selective herbicide for broadleaf species. It has no soil activity.
AROMATIC AMINO ACID INHIBITORS	
Glyphosate *Roundup*, *Accord XRT II*, and others	**Rate:** Spot treatment: 2% v/v solution *Roundup ProMax* (or other trade name with similar concentration of glyphosate) and water to thoroughly wet all leaves **Timing:** Postemergence when plants are growing rapidly. Applications in early spring provide best control. **Remarks:** Glyphosate is a nonselective systemic herbicide with no soil activity. Repeated applications may be necessary for complete control.
BRANCHED-CHAIN AMINO ACID INHIBITORS	
Imazapyr *Arsenal*, *Habitat*, *Stalker*, *Chopper*, *Polaris*	**Rate:** 3 pt product/acre (12 oz a.e./acre) plus 0.25 to 0.5% v/v surfactant to thoroughly wet all leaves **Timing:** Postemergence when plants are growing rapidly. **Remarks:** Imazapyr is a preemergent and postemergence herbicide effective for controlling broadleaf weeds and grasses. It has fairly long soil residual activity.
PHOTOSYNTHETIC INHIBITORS	
Hexazinone *Velpar L*	**Rate:** 2.75 to 4.5 pt product/acre (0.7 to 1.1 lb a.i./acre) to thoroughly wet all leaves **Timing:** Early postemergence when plants are growing rapidly. **Remarks:** Hexazinone provides both contact and residual control of many broadleaf and grasses. It has a long soil activity, is considered mobile, and should not be used in areas where the water table is shallow. High rates of hexazinone can create bare ground, so only use high rates in spot treatments.

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.