Oxalis corniculata (Oxalidaceae)
Creeping Wood-Sorrel

Description. Perennial, from a slender taproot; stems 5-50 cm long, prostrate to procumbent, rooting at the nodes, glabrous to puberulent, the hairs appressed to spreading. Leaves stipulate, in clusters at the nodes, erect, compound, petiolate, with 3 leaflets, leaflets 5-20 mm long, often purplish, usually obcordate, folding lengthwise at night. Flowers 1-7, in umbellate clusters, radial, bisexual, sepals 5, distinct, petals 5, 4-8 mm long, somewhat united at the base, yellow, stamens 10, in two sets, five long and 5 short; ovary superior, with 5 locules, 5 style branches; fruit a capsule, dehiscing longitudinally; seeds reddish brown, reticulate to ridged. In California, flowering from May to November. (Gleason and Cronquist 1991, McGregor 1986, Munz 1959, Valentine 1968, Welsh et al. 1987)

Synonym = *Oxalis repens* Thunb.

Note: *Oxalis corniculata* sometimes has been confused in California with the native *Oxalis albicans*, which has green leaves, petals 8-12 mm long, and which lacks stoloniferous stems. Elsewhere it has been confused with *O. stricta* L. (Eiten 1963). Apparently var. *repens* (Thunb.) Zucc., a native of southern Africa, represents the race that has become established elsewhere as a weed in the world, including Europe. (Arnold and de Wet 1993, Valentine 1968)

Geographic distribution. Generally believed to be a native of Eurasia, creeping wood sorrel (as both var. *corniculata* and var. *repens*) is widespread in North America, South America, Africa, Australia, Asia and New Zealand (Arnold and de Wet 1993, Chapman 1991, Holm et al. 1977, Gleason and Cronquist 1991, Ornduff 1993, Watson 1989, Webb et al. 1988, Valentine 1968, Welsh 1987).

It ws first reported from near San Francisco by Bolander (1870) and southern California (Brewer et al. 1876), but also had been collected during the 1840s (Howell 1937). By the late 19th century it had become widely established in southern California (Hilgard 1890, Robbins 1940). It has been reported from Santa Cruz and Santa Rosa islands (Junak et al 1997), and is widespread throughout much of California west of the Sierra Nevada (Anonymous 1998, Ornduff 1993).

Reproductive and vegetative biology. Natural populations of *Oxalis corniculata*, unlike most other members of the genus, is heterostylous (with 3 floral forms) but self-compatible and strongly self-pollinating (Lovett Doust et al. 1981, Ornduff 1972). However, greenhouse populations and presumably other naturalized populations may be homomorphic, self-compatible, and largely self-pollinating (Lovett Doust et al. 1985, Shibaike et al. 1996). Shibaike et al. (1996) found considerable variation among local naturalized populations in Japan for morph ratios and levels of self-pollination.

It flowers throughout the year in warm temperate or tropical climates. At fruting maturity, capsules dehisce explosively, so that seeds are dispersed several cm from the source (Robertson 1975). Seeds have no dormancy and may germinate within 2 weeks after dispersal, but the level of germination is dependent primarily on soil temperature (Holt 1987). Seeds produced during winter months generally germinate at 15° to 25° C, whereas seeds produced during the summer

months germinate at 10° to 30° C. Warcup (1980) reported that heat treatments also stimulated germination. Seeds retained under dry conditions at room temperature retained high levels of viability and germinability for over 1 year (Holt 1987).

Ecological distribution. Creeping wood-sorrel has been reported from disturbed open sites, roadsides, gardens, lawns, greenhouses, cultivated fields, and waste areas (Gleason and Cronquist 1991, Lourteig 1979, McGregor 1986, Munz 1959, Valentine 1968, Welsh et al. 1987).

Weed status. *Oxalis corniculata* is considered one of the most serious and noxious weeds in agricultural or horticultural practice, at least at a global level (not listed by Holm et al. 1977), nor is it considered a noxious weed by the State Dept. of Food and Agriculture (Anonymous 1996). It is listed (presumably under the name *O. stricta*) for the United States by Lorenzi and Jeffery (1987). In most temperate climates, *Oxalis corniculata* is primarily considered a lawn, garden, greenhouse, and container-plant weed rather than one infesting cultivated fields and natural plant communities (Lovett Doust et al. 1985, Lorenzi and Jeffery 1987, Lourteig 1979).

Microbial pathogens. Creeping wood-sorrel has been reported to be a host of the rust, *Puccinia bakshii* (De 1997).

Insect pathogens. Creeping wood-sorrel has been reported as an alternate host of nematodes (Holm et al. 1977).

Herbicide control. Several herbicides have been used in the control of creeping wood-sorrel, including aciflouren, atrazine, chloramben, chlorimuron, dicamba, 2,4-D, imazaquin, oxyflourfen, and trichlopyr (Colvin and Rice 1987, Elmore 1984, Holt and Chism 1988, Lorenzi and Jeffery 1987, Moore et al. 1989). Moore et al. (1989) reported complete control of seed germination using imazaquin and oxyflourfen with container plants.

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