

Maltese cross

Silene chalcedonica (L.) E. H. L. Krause

Synonyms: *Agrostemma chalcedonica* (L.) Doellinger, *Lychnis chalcedonica* L.

Other common names: burning love, dusky salmon, flower of Bristol, Jerusalem cross, nonesuch, scarlet lychnis

Family: Caryophyllaceae

Invasiveness Rank: 42 The invasiveness rank is calculated based on a species' ecological impacts, biological attributes, distribution, and response to control measures. The ranks are scaled from 0 to 100, with 0 representing a plant that poses no threat to native ecosystems and 100 representing a plant that poses a major threat to native ecosystems.

Description

Maltese cross is a rhizomatous, perennial plant that grows 30 to 100 cm tall. Rhizomes are stout and branched. Stems are erect, few-branched, and hairy. Leaves are sessile, opposite, rounded at the base, lanceolate to ovate, sparsely hairy on both surfaces, 5 to 12 cm long, and 2 to 6 cm wide. Basal leaves are broadly spatulate. Flowers are arranged in groups of 10 to 50 in dense, corymb-like inflorescences at the ends of stems. Flowers are sessile or nearly sessile and 10 to 20 mm in diameter with five petals each. Petals are deeply two-lobed and usually dark red but sometimes pink or white. Calyxes are 10-veined, narrow, tubular, hairy, and 12 to 17 mm long with toothed margins. Capsules are ovoid and 8 to 10 mm long. They split into five lobes to release seeds. Seeds are red-brown and 0.7 to 1 mm in diameter (Morton 2005, eFloras 2008, NatureGate 2011).



Inflorescence of *Silene chalcedonica* (L.) E. H. L. Krause. Photo by R. Old.

Similar species: Maltese cross can be distinguished from all similar *Silene* species in Alaska (including those sometimes classified in the genus *Lychnis* or *Melandrium*) by the combination of the following features: dark red petals, dense inflorescences, lanceolate to ovate leaves, hairy stems that often grow

over 50 cm tall, five stigmas, and five-toothed capsules (Hultén 1968, Morton 2005).



Silene chalcedonica (L.) E. H. L. Krause. Photo by R. Old.

Ecological Impact

Impact on community composition, structure, and interactions: In Alaska, Maltese cross has been documented growing at 10% to 40% ground cover in disturbed areas near town sites (AKEPIC 2011); it may therefore increase the density of forb layers in disturbed areas and reduce populations of native colonizing species. It is attractive to bees, butterflies, hummingbirds, and birds (WSU Clark County Extension 2011) and may therefore alter native plant-pollinator interactions. This species is a known host for several plant diseases (Kahtz 2008).

Impact on ecosystem processes: Other *Silene* species,

such as white cockle (*S. latifolia*) and night-flowering catchfly (*S. noctiflora*), are known to reduce soil moisture and nutrients (Royer and Dickinson 1999). It is likely that the closely related Maltese cross similarly reduces the availability of moisture and nutrients.

Biology and Invasive Potential

Reproductive potential: Maltese cross reproduces sexually by seeds and vegetatively from rhizomes (Morton 2005). It has limited ability to move shoots horizontally, and it forms clumps (Hitchmough 2000). Neither the number of seeds produced per plant nor the amount of time seeds remain viable in the soil have been quantified for Maltese cross.

Role of disturbance in establishment: Maltese cross grows in disturbed areas, abandoned home sites, roadsides, and open woodlands (Morton 2005, AKEPIC 2011). All recorded infestations of Maltese cross in Alaska occur in anthropogenically disturbed areas near towns or cities (AKEPIC 2011).

Potential for long-distance dispersal: No long-distance dispersal mechanisms have been documented for Maltese cross. However, the seeds are relatively small, 0.7 to 1 mm in diameter (Morton 2005) and may be carried short distances by wind.

Potential to be spread by human activity: Maltese cross is grown in gardens as an ornamental plant (Morton 2005, eFloras 2008). It has been grown as an ornamental plant in a garden in Cooper Landing, Alaska, and has escaped from cultivation around an abandoned home site in Gustavus, Alaska. Seeds are sometimes included in "wildflower" seed mixes sold commercially in Alaska (AKEPIC 2011). However, this species rarely escapes cultivation and is not expected to persist (Morton 2005).

Germination requirements: The germination requirements of Maltese cross are unknown.

Growth requirements: Maltese cross grows best in full sunlight on well-drained soils (eFloras 2008, Kahtz 2008). It requires constant moisture (Kahtz 2008, WSU Clark County Extension 2011). Plants flower the year following their germination (eFloras 2008).

Congeneric weeds: Balkan catchfly (*Silene csereii*), white cockle (*S. latifolia*), night-flowering catchfly (*S. noctiflora*), and bladder campion (*S. vulgaris*) are each considered a noxious weed in one or more provinces of Canada or states of the U.S. (Invaders 2011, USDA 2011). Red catchfly (*S. dioica*), white cockle, night-flowering catchfly, and bladder campion are non-native

weeds known to occur in Alaska with invasiveness ranks of 42 (AKEPIC 2011).

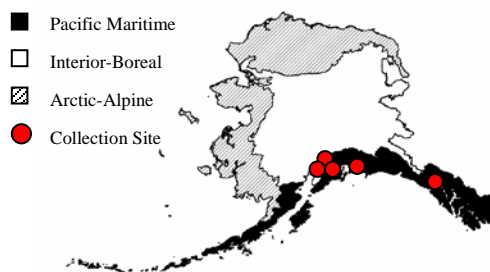
Legal Listings

- Has not been declared noxious
- Listed noxious in Alaska
- Listed noxious by other states
- Federal noxious weed
- Listed noxious in Canada or other countries

Distribution and Abundance

Maltese cross is cultivated often in North America, Russia, and China (Morton 2005, eFloras 2008). However, it rarely escapes cultivation and is not expected to persist (Morton 2005). In Russia, it grows in moist forest meadows, shrublands, and ravines (eFloras 2008, NatureGate 2011).

Native and current distribution: Maltese cross is native to western Russia, Siberia, Central Asia, and Mongolia (eFloras 2008). It has been introduced to Europe and North America (Hitchmough 2000, NatureGate 2011, USDA 2011). In the U.S., it grows in Alaska, Connecticut, Idaho, Illinois, Indiana, Maine, Massachusetts, Michigan, Minnesota, Montana, New Hampshire, New York, North Dakota, Pennsylvania, Vermont, and Wisconsin (Morton 2005, USDA 2011). This species is not known to grow in arctic or subarctic regions. Maltese cross has been documented from Cooper Landing, Cordova, Gustavus in the Pacific Maritime ecogeographic region of Alaska and Anchorage and Kenai in the Interior-Boreal ecogeographic region (AKEPIC 2011, UAM 2011).



Distribution of Maltese cross in Alaska

Management

Control measures have not been documented for *Silene chalcedonica*.

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