

European forget-me-not

Myosotis scorpioides L.

Synonyms: *Myosotis palustris* (L.) Hill, *Myosotis scorpioides* var. *palustris* L.

Other common names: forget-me-not, large-seed forget-me-not, true forget-me-not, water forget-me-not, yelloweye forget-me-not

Family: Boraginaceae

Invasiveness Rank: 54 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

European forget-me-not is a stoloniferous, perennial herb that grows from 15 to 60 cm tall. Roots are fibrous. Stems are mostly unbranched, often angled, decumbent to erect, and inconspicuously hairy. Leaves are alternate, entire, 2.5 to 8 cm long, and 7 to 20 mm wide with scattered, short, flat-lying hairs. Lower leaves are oblanceolate and narrow towards the base but are not petiolated. Upper leaves are oblong to elliptic and short-petiolated or sessile. Flowers are borne in narrow, coiled, elongating, bractless, terminal inflorescences. They are five-parted, 4 to 12 mm in diameter, and pale blue with yellow centers. Calyxes are densely covered in flat-lying hairs and are 2 to 4 mm long with triangular teeth that are as long as they are wide. Flowers produce four nutlets each. Nutlets are 2 to 2.5 mm long and smooth (Hultén 1968, Cody 1996, Klinkenberg 2010, NatureGate 2010).



Flowers and foliage of *Myosotis scorpioides* L. Photo by N. Buculei.



Dense infestation of *Myosotis scorpioides* L. in Alaska. Photo by T. Heutte.

Similar species: European forget-me-not can be confused with the native Asian forget-me-not (*Myosotis asiatica*). Unlike the teeth on the calyxes of European forget-me-not, the teeth on the calyxes of Asian forget-me-not are significantly longer than they are wide. Asian forget-me-not can also be distinguished from European forget-me-not by the presence of long-petiolated basal leaves, spreading to ascending hairs on the calyxes, and nutlets that are 1 to 2 mm long. European forget-me-not can also be confused with the non-native species, wood forget-me-not (*Myosotis sylvatica*) and European stickseed (*Lappula squarrosa*). Unlike European forget-me-not, wood forget-me-not often has many-branched stems, nutlets that are 1.5 to 2 mm long, calyxes that are 4 to 5 mm long, hooked hairs on its calyxes, and short-petiolated basal leaves. European stickseed can be distinguished from European forget-me-not by the presence of two or three rows of barbed prickles on its nutlets, dense hairs covering the entire plant, and flowers that are subtended by bracts (Hultén 1968, Cody 1996, Mehrhoff et al. 2003,

DiTomaso and Healy 2007, Klinkenberg 2010, NatureGate 2010).

Ecological Impact

Impact on community composition, structure, and interactions: European forget-me-not competes with native plants in wet areas (Ling 2010) and can form large monocultures (Mehrhoff et al. 2003); therefore, it has the potential to significantly reduce populations of native plant species, and it may change the density of vegetation in naturally or anthropogenically disturbed, wet areas. This species contains pyrrolizidine alkaloids that are toxic to mammals and can cause weight loss, poor body condition, and liver disease (DiTomaso and Healy 2007). Plants provide additional habitats for aquatic, winged insects (Ling 2010). The nectar and pollen attract pollinating insects (Ling 2010, Plants for a Future 2010); the presence of European forget-me-not may alter native plant-pollinator interactions. European forget-me-not forms associations with mycorrhizal fungi (Šraj-Kržič et al. 2006).

Impact on ecosystem processes: European forget-me-not may reduce the nutrients available to native plant species in wet areas, particularly where it grows at high densities (Mehrhoff et al. 2003, Ling 2010).

Biology and Invasive Potential

Reproductive potential: European forget-me-not reproduces sexually by seeds and vegetatively by stolons that root at the nodes (Washington Water Quality Program 2010). Neither the number of seeds produced per plant nor the amount of time seeds remain viable has been quantified for European forget-me-not. However, the perennial alpine forget-me-not (*Myosotis alpestris*) produces 20 to 120 seeds per plant in Britain (Elkington 1964), and the annual or biennial field forget-me-not (*M. arvensis*) produces up to 700 seeds per plant in Russia (Luneva 2009).

Role of disturbance in establishment: In northern Germany, seedlings of European forget-me-not were found most frequently in moderately grazed areas (Vogt et al. 2007), suggesting that grazing disturbances promote the germination of this species. All recorded infestations of European forget-me-not in Alaska are associated with disturbances. Most infestations have established in anthropogenically disturbed sites, but some are associated with natural coastal, river, or stream disturbances (AKEPIC 2010).

Potential for long-distance dispersal: Seeds can be transported by water (Mehrhoff et al. 2003). European forget-me-not germinated from water and soil samples that were taken during and after a flood in a wetland along the Rhône River in France (Cellot et al. 1998).

Potential to be spread by human activity: European forget-me-not is planted in gardens as an ornamental or medicinal herb, and it escapes from cultivation into natural areas (Hultén 1968, Cody 1996, Mehrhoff et al.

2003, Ling 2010, Plants for a Future 2010, Washington Water Quality Program 2010).

Germination requirements: Seeds do not require cold stratification to germinate (USDA 2010).

Growth requirements: European forget-me-not requires moist to wet soils for growth (Plants for a Future 2010). It can grow partially submerged in water (Mehrhoff et al. 2003, DiTomaso and Healy 2007, Ling 2010, Plants for a Future 2010).

Congeneric weeds: Broadleaf forget-me-not (*Myosotis latifolia*) is a problematic, non-native species in California (DiTomaso and Healy 2007). Wood forget-me-not (*M. sylvatica*) is known to occur as a non-native species in Alaska (AKEPIC 2010).

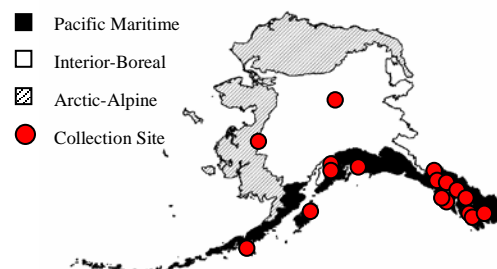
Legal Listings

- Has not been declared noxious (but is considered invasive in CT and is prohibited in MA)
- Listed noxious in Alaska
- Listed noxious by other states
- Federal noxious weed
- Listed noxious in Canada or other countries

Distribution and Abundance

European forget-me-not has been cultivated as an ornamental plant and was most likely brought to North America as an intentional planting. It escapes from gardens into natural communities (Hultén 1968, Cody 1996, Mehrhoff et al. 2003, Washington Water Quality Program 2010).

Native and current distribution: European forget-me-not is native to temperate Eurasia (eFloras 2008). It has been introduced to North America and New Zealand (GBIF New Zealand 2010, USDA 2010). This species grows in 41 states of the U.S. and much of Canada (USDA 2010). European forget-me-not is known from many locations north of the Arctic Circle in Norway and grows as far north as 69.733°N (NBIC 2010). It is also known from arctic Russia (Elven 2007). This species has been documented from the Pacific Maritime and Interior-Boreal ecogeographic regions of Alaska (Hultén 1968, AKEPIC 2010, UAM 2010).



Distribution of European forget-me-not in Alaska

Management

Control methods have not been documented for European forget-me-not.

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