

purple foxglove

Digitalis purpurea L.

Synonyms: None
Other common name: None
Family: Plantaginaceae

Invasiveness Rank: 51 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

Purple foxglove is a biennial or perennial herb with erect stems that grow 91 to 183 cm tall. Lower leaves can grow up to 30 ½ cm long and 5 cm wide. They have toothed margins and are soft-hairy above. Leaves become progressively smaller up the stem. Purple foxglove grows as a rosette during the first year. In the second year, it produces a leafy stock bearing a tall spike of bell-shaped, nodding flowers, all of which originate from one side. Flowers are 4 to 6 cm long and usually pink (although they can range from white to purple) with dark spots on their lower inside surfaces. Fruits are ovoid and approximately 13 mm long with many minute seeds (Harris 2000, Whitson et al. 2000).



Digitalis purpurea L. Photo by T. Heutte.

Similar species: Purple foxglove cannot be easily mistaken for any other species in Alaska. Although *Penstemon* species can appear superficially similar to purple foxglove, all *Penstemon* species in Alaska grow less than 61 cm in height. Purple monkeyflower (*Mimulus lewisii*) also looks superficially similar to purple foxglove but has branched stems without long spikes of flowers.

Ecological Impact

Impact on community composition, structure, and interactions: Purple foxglove readily colonizes disturbed areas, forming dense patches that displace native vegetation (Harris 2000). It is toxic to humans and animals (Harris 2000, Whitson et al. 2000, USDA 2002, CUPPID 2004). Rabbits and deer avoid the leaves of purple foxglove (Floridata 2002).

Impact on ecosystem processes: As an invader of disturbed sites, purple foxglove is likely to hinder natural successional processes.

Biology and Invasive Potential

Reproductive potential: Purple foxglove reproduces by seeds only. Seeds can remain viable in the soil for at least five years (Harris 2000).

Role of disturbance in establishment: Roots of young plants are unable to penetrate turf or litter. Soil disturbances greatly increase the establishment of seedlings (Vazquez-Yanes et al. 1990, Harris 2000).

Potential for long-distance dispersal: Seeds are small and numerous, and they can be dispersed by wind and water (Harris 2000). However, seeds lack specific adaptations for dispersal.

Potential to be spread by human activity: Purple foxglove is cultivated as an ornamental plant and is grown commercially for use as a heart stimulant (Floridata 2002). It escapes cultivation (Hultén 1968, Welsh 1974).

Germination requirements: Germination rates are highest at temperatures between 21°C and 26°C. Seeds do not require cold stratification for germination (USDA 2002).

Growth requirements: Purple foxglove is adapted to fine

and medium-textured soils with pH between 5.5 and 7. It requires 190 frost free days for successful growth and reproduction. Purple foxglove can withstand temperatures as low as -25°C. It is shade intolerant (USDA 2002).

Congeneric weeds: Grecian foxglove (*Digitalis lanata*) is known as an invader of grasslands and woodlands in Wisconsin (WDNR 2004).

Legal Listings

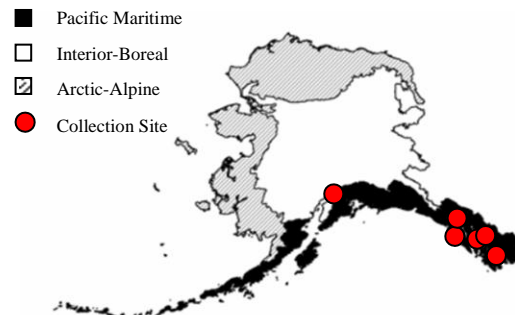
- Has not been declared noxious (but is considered an invasive weed in Colorado)
- Listed noxious in Alaska
- Listed noxious by other states
- Federal noxious weed
- Listed noxious in Canada or other countries

Distribution and Abundance

Purple foxglove invades roadsides, disturbed areas, moist meadows, open woodlands, and pastures (Harris 2000).

Native and current distribution: Purple foxglove is native to western Europe, the Mediterranean region, and northwest Africa. It has become naturalized in other parts of Europe and Africa as well as in Asia, South America, New Zealand, Canada, and much of the United States (Hultén 1968, Wilson 1992, USDA 2002).

Purple foxglove is widely established along roads and in areas disturbed by logging in southeast Alaska. It is commonly cultivated as an ornamental plant throughout southeast Alaska. This species has been documented from the Pacific Maritime ecogeographic region of Alaska (Hultén 1968, AKEPIC 2010, UAM 2010).



Distribution of purple foxglove in Alaska

Management

Hand pulling can be an effective control of foxglove. Herbicides are more effective with large infestations. Control efforts are required for at least five years. Sites must be monitored for five to ten years after treatment, because of the long-lived seedbank. Biological control has not been pursued because of the plant's value in horticulture (Harris 2000).

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<http://www.dnr.state.wi.us>

