

Scotch broom

Cytisus scoparius (L.) Link

Synonyms: *Sarothamnus scoparius* (L.) Wimmer ex Koch
Common name: English broom, scotch broom
Family: Fabaceae

Invasiveness Rank: 69 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

Scotch broom is a woody shrub that grows up to 3 meters tall with many erect, angled, dark green branches. Leaves are mostly three-parted with entire leaflets. Leaflets are obovate to oblanceolate and 6 to 13 mm long. Flowers are showy, yellow, and abundant. They are usually arranged solitary in leaf axils. Pods are flattened and brown or black with white hairs on the margins (Hoshovsky 1986, Whitson et al. 2000).



Cytisus scoparius (L.) Link. Photo by J. Peterson.

Similar species: No species in Alaska can easily be confused with Scotch broom.

Ecological Impact

Impact on community composition, structure, and

interactions: Within its first year, Scotch broom can grow over 91 cm tall. It grows so densely that it is often impenetrable, preventing the establishment of native plants. This species fixes nitrogen throughout the year in regions with mild winters (Wheeler et al. 1979). When infestations become too dense, they eliminate forage sites for deer. Scotch broom is slightly toxic and unpalatable for browsing animals (Hoshovsky 1986).

Impact on ecosystem processes: Infestations of Scotch broom prevent reforestation and increase the risk of fires. Scotch broom produces sparse, readily decomposable litter (Hoshovsky 1986).

Biology and Invasive Potential

Reproductive potential: Scotch broom can reproduce sexually by seeds or vegetatively. It sprouts back after cutting and has been purposefully propagated from cuttings. An individual plant can produce up to 60 seed pods during its second year and 300 to 7,000 seed pods every subsequent year. Each pod usually contains four to nine seeds (Waloff and Richards 1977). Seeds can remain viable in the soil for over 80 years (Hoshovsky 1986).

Role of disturbance in establishment: Disturbances that create bare patches of soil favor the establishment of Scotch broom. Scotch broom can regenerate only where the canopy has been disturbed by fire, substrate instability, or sheep and cattle grazing (Hoshovsky 1986).

Potential for long-distance dispersal: Pods often open explosively, and the seeds can be scattered widely. Scotch broom spreads most rapidly along waterways where the seeds are dispersed by water. Seeds have hard seed coats, which protect the seeds as they move along river gravels. Seeds may also be transported to isolated areas by birds and other animals (Hoshovsky 1986).

Potential to be spread by human activity: Scotch broom is frequently planted in gardens and along highway cuts and fills as a soil binder. It spreads rapidly along roads because seeds can be transported by passing vehicles. It can also be spread in gravel hauled from river bottoms (Hoshovsky 1986).

Germination requirement: Only about 45% to 50% of

the seeds produced actually germinate. For horticultural purposes, soaking the seeds in water and scarifying them mechanically is recommended. Such treatment is accomplished when seeds are transported by water for any distance. Seeds buried deeper than 10 cm deep fail to emerge. The fastest emergence occurs when seeds are buried less than 2½ cm deep in a fine substrate (Hoshovsky 1986).

Growth requirements: Scotch broom is adapted to all types of soil with pH between 5.5 and 7. It can tolerate drought and fire. This species withstands temperatures as low as -25°C and requires 150 frost-free days for reproduction. Seeds do not require cold stratification to germinate. Scotch broom is not shade tolerant (USDA 2010).

Congeneric weeds: Portugese broom (*Cytisus striatus*) is considered a quarantined weed in Oregon (Invaders 2010, USDA 2010).

Legal Listings

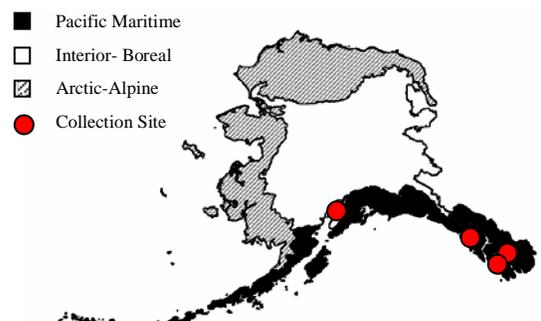
- Has not been declared noxious
- Listed noxious in Alaska
- Listed noxious by other states (CA, HI, ID, OR, WA)
- Federal noxious weed
- Listed noxious in Canada or other countries

Distribution and Abundance

Scotch broom invades pastures, native grasslands, cultivated fields, roadsides, dry scrublands, and dry riverbeds. It does not grow well in forested areas but invades rapidly following logging, land clearing, and burning (Hoshovsky 1986, Whitson et al. 2000).

Native and current distribution: In western North America, Scotch broom has established along the inland

valleys of the Pacific Northwest, from British Columbia to central California (Hitchcock and Cronquist 1990). It has been collected from Sitka, Alaska (UAM 2010), and reported from Ketchikan and Prince of Wales Island (M. Shephard – pers. comm.). Scotch broom has been documented from the Pacific Maritime and Interior-Boreal ecogeographic regions of Alaska (AKEPIC 2010, UAM 2010).



Distribution of scotch broom in Alaska.

Management

Scotch broom can be hand-pulled, cut, or mown. Several herbicides effectively control infestations of Scotch broom. Seeding controlled areas with native species may prevent or reduce the reestablishment of Scotch broom. Several broom-feeding insects from Europe may be adequate biological control agents, but none have been introduced to North America. Because Scotch broom stumps can resprout, controlled areas should be monitored for at least one year (Hoshovsky 1986).

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