Cytisus scoparius

SCOTCH BROOM

Photo Credit: CARRINA MASLOVAT

ENGLISH NAMES	Scotch broom, Scot's broom, English broom
SCIENTIFIC NAME	Cytisus scoparius
FAMILY	Fabaceae or Leguminosae (Pea)
OTHER SCIENTIFIC NAMES	Sarothamnus scoparius, Sorothamnus scoparius

Scotch broom is a woody shrub with green branches and abundant yellow flowers.

RANGE/KNOWN DISTRIBUTION

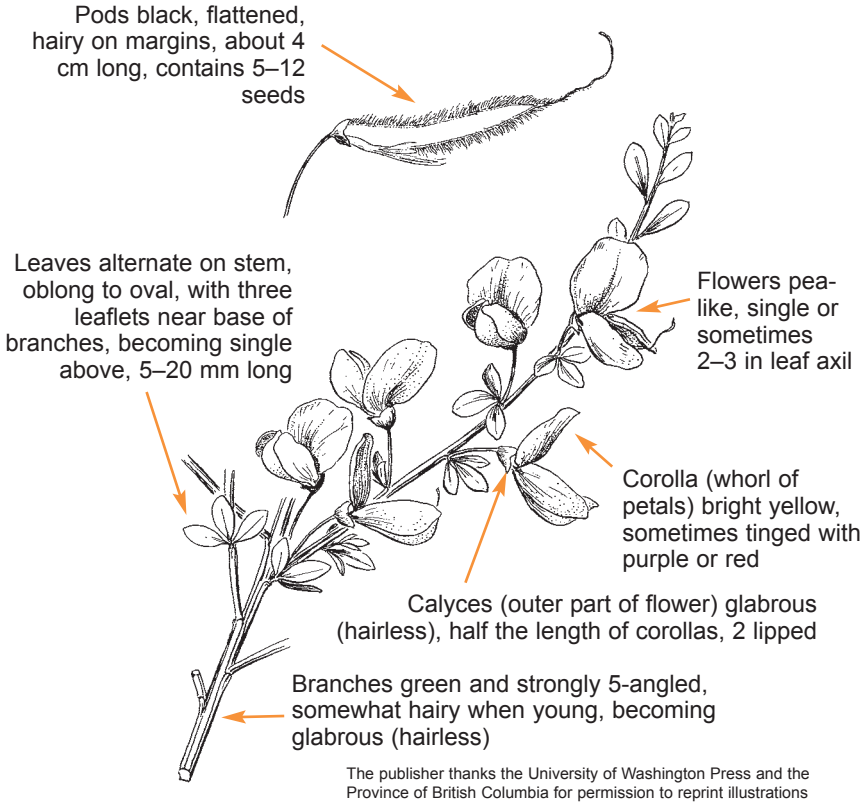
Scotch broom is native to central/southern Europe and the Middle East. It has been introduced to Chile, India, Iran, Australia, New Zealand, South Africa and North America. It has become widely naturalised from California to British Columbia, and is listed as a Class B noxious weed in Washington and Oregon. Introduced to Vancouver Island in 1850, broom grows prolifically in southwestern British Columbia throughout the Garry oak range and is also found in patches on the Queen Charlotte Islands and in some inland sites.

IMPACTS ON GARRY OAK AND ASSOCIATED ECOSYSTEMS

Scotch broom can rapidly create a shrub layer where native shrubs were absent or patchy, forming a dense monoculture that eliminates the herbaceous understory and the open habitat once used by native birds and butterflies. It can change the ecosystem by 'fixing' atmospheric nitrogen into the soil, which in turn favours other non-native plants such as orchard grass. Mature broom plants produce large amounts of woody fuel, which creates a risk of hotter-than-normal fires and the potential for associated damage to oaks and other native vegetation.

FIELD DESCRIPTION

Scotch broom is a deciduous shrub up to 3 m tall. Seedlings are green and spindly, while mature plants have erect woody stems with green branches. Flowers are bright yellow,



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sometimes tinged with purple or orange. The seed pods are black. It appears similar to gorse (Ulex europaeus), but broom has no spines.

LIFE HISTORY

Seedlings grow rapidly, becoming woody as they age. Seed production begins when the plant is two–three years old. The main flowering season is from February to May, with the fruit setting in June and seed dispersal occurring as early as mid-July.

The seeds—up to 18,000 annually from a single plant —are spread up to five metres away from the parent plant when the pods dry out and snap open explosively. These seeds may be spread further by animals, by transportation of contaminated soil, on vehicle tires or by movement of water.

Scotch broom typically forms dense stands with a nearly

closed canopy and branches that lean increasingly outwards as the plant ages. Individual plants will live for 10–20 years. As the plant ages its branches thin out, letting more light to the ground and encouraging the germination of new broom seedlings.

HABITAT

Scotch broom prefers open sites such as natural meadows, rocky slopes, open forests and disturbed areas such as roadsides and hydro rights-of-way. It grows best in well-drained, dry sandy soils in full sunlight, but less well in shade.

MANAGEMENT

Once broom has established in an area, it will take 20 or more

> Develop a long-term, realistic program for invasive species removal before undertaking any work. Before taking action, expert advice should be obtained. Please refer to the introductory section of this manual.

years of management to deplete the seed bank. Broom removal will result in a flush of broom seedlings the following year. The highest priority is to prevent the establishment of the seed bank by removing young broom before it flowers. Soil disturbance should be minimised as this encourages seedling growth.

PHYSICAL CONTROL: Hand pull small seedlings from November to January (or use small weed wrenches) when wildflowers are absent and the soil is moist. If pulling causes soil disturbance, cut the stems at soil level.

Older plants can be cut close to the ground using loppers or brush saws. Avoid cutting so close to the ground that the soil is disturbed. Any resprouting from cut stems can be reduced by cutting when the plant is stressed (immediately after flower production or during summer drought), by cutting with a brush saw (which frays the stems) or by damaging the stem or bark with an axe after cutting. Return in following years to hand pull any young plants before they can flower, taking care to avoid trampling native plants.

Cut plants should be removed from the site and can be

composted or chipped (if there are no viable seeds). Piles of dead broom will kill all vegetation beneath them if left too long. Beware of spreading the seeds when removing the cut plants.

BIOLOGICAL CONTROL: Some insects appear to reduce seed production even if they do not kill the plants. Fungi are also being tested as a control method.

CHEMICAL CONTROL: Herbicides can be effective in controlling broom. Herbicides should only be used with extreme caution, and under expert advice, in sensitive Garry oak ecosystems.

OTHER TECHNIQUES: Shading with taller species can reduce broom growth, if appropriate to the ecosystem.

Annual mowing in summer, when the soil is hard and native plants have set seed, may help to control young broom.

Prescribed burns remove the adult plants, but also encourage seed germination, so determined follow up is required. Some researchers are testing the use of repeated burns to exhaust the seed bank, and the use of flame torches to eliminate new growth. Burning should only be undertaken with expert advice, as its impacts on native species are complex and uncertain.

PREVENTATIVE MEASURES: Early removal of young broom before it can set seed is the best prevention.

PERSISTENCE: Scotch broom produces vast numbers of seeds that may remain viable for 30—and perhaps as many as 80—years. It can regrow from cut stems.

REFERENCES

Peterson, D.J. and R. Prasad, 1998. “The Biology of Canadian Weeds. 109. Cytisus scoparius (L) Link.” Canadian Journal of Plant Science. 78: 497–504.

Douglas, G.W., D. Meidinger and J. Pojar (eds.), 1999. Illustrated Flora of British Columbia, Volume 3. Ministry of Environment, Lands and Parks, Ministry of Forests, Victoria, BC.

For more information contact the Garry Oak Ecosystems Recovery Team, or see the website at www.goert.ca

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