

T.I.P.S.

Targeted Invasive Plant Solutions

4 Scotch Broom



Legal Status

- ✓ Invasive Plants Regulation, *Forest and Range Practices Act*

Distribution

Currently distributed on the Pacific and Atlantic coasts of North America. It is common west of the Coast-Cascade Mountains in southwest BC and is concentrated at the southern end of Vancouver Island. It has also been reported on the Queen Charlotte Islands and in parts of the Kootenays and North Okanagan-Shuswap areas.

Identification

Flowers: Yellow and pea-like; may have a red marking in the middle.

Stems: Woody and 5-angled; 1-3 m tall shrub.

Leaves: Stalked lower leaves are composed of three leaflets; un-stalked upper leaves are simple.

Fruits: Flat, hairy seedpods that are initially green, turn brown to black in color.

Similar Species: Spanish Broom flowers grow at the tips of stems (crowning the plant), whereas Scotch Broom flowers grow along stems.

Ecological Characteristics

Habitat: This escaped garden ornamental invades exposed, well-drained mineral soil, and is shade-intolerant.

Reproduction: Perennial species that reproduces by seed and lateral bud growth. Mature plants can produce up to 3500 pods, each containing 5-12 seeds.

Dispersal: As seedpods dry they split and spiral, expelling the contained seeds up to 5 metres. The plant can also spread to new disturbed areas through seed transport by vehicles and machinery. Due to its affinity for light-dominated, disturbed areas, any disturbance activity, such as road construction near infested areas, can enhance spread.



Current Distribution in BC



Dots indicate species presence as recorded in IAPP (accessed March 15, 2007).



Scotch Broom • *Cytisus scoparius* • Synonyms - Scots broom

Impacts

Economic: Invades rangeland, replacing forage plants, and can be a serious competitor to conifer seedlings. Douglas fir plantation failures in Oregon and Washington have been credited to infestations by this plant. High density infestations can: (i) increase wildfire fuel loads, thereby escalating wildfire intensity; and (ii) obstruct sight lines on roads, resulting in increased maintenance costs for removal.

Ecological: Can produce dense, impenetrable thickets that may be impacting Garry oak woodlands in southwestern BC and limiting the movement of large animals, wild or domestic. Possesses photosynthetic stems to enable year-round growth, leading to displacement of native plant species.



Ministry of Agriculture and Lands

Integrated Pest Management

IPM is a decision-making process that includes identification and inventory of invasive plant populations, assessment of the risks that they pose, development of well-informed control options that may include a number of methods, site treatment, and monitoring.

Prevention

- Minimize soil disturbance in areas directly adjacent to existing infestations and contain or localize seed spread.
- Remove broom before it flowers (late winter, early spring) to prevent seed maturation.
- After mechanical treatment, promptly re-vegetate with an appropriate seed mix, followed by an application of phosphorous-rich fertilizer and wood mulch. Contact local seed suppliers to determine an appropriate seed mix.
- Promptly establish competitive shrubbery, including snowberry, salmonberry, thimbleberry, and Oregon grape, as well as red alder trees for shading and competition for nitrogen, to reduce broom growth.

Mechanical Control

- Minimizing soil disturbance, cut larger plants below ground level before flowering and seed set. Plants with stems less than 1.5 cm in diameter may be hand pulled, preferably in late spring when the plant is directing its energy into flower and seed production.
- Due to enormous 'seed banking' and re-sprouting potential (stumps and roots), mechanical treatments may need to be repeated over a 3 to 5 year period.
- Mechanical control is most effective if all of the plant is removed, no seeds are dropped and soil disturbance is minimized.
- Hand pulling may encourage broom growth due to the high level of soil disturbance. If pulling will result in soil disturbance, plants can be cut as close to the ground as possible.
- Burning is not an effective control method as broom seeds germinate following a burn.

Biocontrol

- There are currently no approved biocontrol agents for BC; however, seed-feeding beetles released in Washington State have moved north adventitiously, and two other agents released in the US are close to our border and suspected to have arrived in BC. Further surveys will seek to confirm their existence.

- Grazing by goats and consumption of seeds by chickens have been shown to reduce broom infestations.

Chemical Control

Herbicide recommendations and use must consider site characteristics and be prescribed based on site goals and objectives. Herbicide labels and other sources of information must be reviewed before selecting and applying herbicides.

- Herbicides containing 2,4-D, triclopyr, picloram, glyphosate, and hexazinone have some success of control, but long seed viability in the soil requires repeated treatments over many years.
- Selective spot spraying, basal stem injection, or cut surface application methods are recommended to minimize non-target damage.
- Application of herbicides on Crown land must be carried out following a confirmed Pest Management Plan (*Integrated Pest Management Act*) and under the supervision of a certified pesticide applicator.
www.env.gov.bc.ca/epd/epdpa/ipmp/index.html

References and Links to Further Information

- BC Ministry of Agriculture and Lands. 2001. www.agf.gov.bc.ca/cropprot/ipm.htm
- BC Ministry of Forests and Range, Invasive Alien Plant Program. <http://www.for.gov.bc.ca/hra/Plants/application.htm>
- E-Flora BC, Electronic Atlas of the Plants of BC. www.eflora.bc.ca
- Field Guide to Noxious and Other Selected Weeds of British Columbia. 2002. www.agf.gov.bc.ca/cropprot/weedguid/scotchbroom.htm
- Garry Oak Ecosystem Recovery Team. Best Practices for Invasive Species Management in Garry Oak and Associated Ecosystems: Scotch Broom (*Cytisus scoparius*). www.goert.ca/documents/Best_Practices_for_Broom_revised.pdf
- Prasad, Raj. Scotch Broom, *Cytisus scoparius* L. in British Columbia. <http://cfs.nrcan.gc.ca/index/scotch-broom>