

NOVEMBER 2006

STEVE'S Weed of the Month

Scotch Broom

Also Known As: common broom, European broom, Irish broom and English broom.

Scotch Broom is a **Class B Weed**. In regions where a Class B species is already abundant, control is decided at the local level, with containment as the primary goal.

Scotch Broom (*Cytisus scoparius*(L.)), is a native to Europe and was introduced into the United States in 1800s as an ornamental and as a plant for stabilizing road cuts. Broom was being sold as an ornamental in California in the 1860s and by 1900 had become naturalized on Vancouver Island, where it was introduced by Captain Walter Grant in 1850. Broom invades roadsides, disturbed areas, pastures, and native grasslands. Broom is widespread in the Pacific Northwest. Broom is an upright, taprooted evergreen shrub in the legume family growing from 1 to 6 feet in height with woody stems. The flowers are pea-like and bright yellow. Scotch broom reproduces vegetatively or by seed. It has been purposefully propagated from cuttings and it sprouts back after cutting. Scotch broom is a prolific and tenacious species: a single bush can produce up to 60 seed pods, with each pod containing five to eight seeds. Broom pods often open explosively, especially in a drying wind, and the seeds may be widely scattered. The seeds are flat brown



to black in color and have hard coats enabling them to survive in the environment for up to 80 years. The seeds are transported from place to place in mud stuck to vehicles, equipment, and the feet of animals. Seeds may be carried via runoff from roads into streams and gullies. Broom forms dense brush over six feet tall.

The brush fields diminish habitat for grazing animals and shade out native grassland plants in invaded areas, therefore favoring the invasion by other woody, non-grassland plant species. Oregon estimates that broom is responsible for \$47 million in lost timber production each year.



Scotch Broom Stand

Control

Physical: These include hand weeding, by pulling, digging, or hoeing; or cutting the above-ground portion (about half the roots will resprout, but if cutting is done before seeds are set, spreading will be contained). Chopping or mowing mechanically has been used in some locations, where there is no concern about removing all vegetation. Continual mowing is likely to produce monoculture pastures of Scotch broom because of resprouting from the roots.

Mechanical: Scotch broom may be trimmed back by tractor--mounted mowers on even ground or by scythes on rough or stony ground. However, these methods are non-selective weed control techniques and will cut all plant species which may not need control. Broom plants usually require several cuttings before the underground parts exhaust their reserve food supply. If only a single cutting can be made, the best time is when the plants begin to flower. At this stage the reserve food supply in the roots has been nearly exhausted, and new seeds have not yet been produced.

After cutting or chopping with mechanical equipment, broom may resprout from root crowns in greater density if not treated with herbicides.

Fire: Prescribed burns in grass consume some broom seeds and break the seed coats of others, allowing pathogens to enter and kill the seeds. Still other seeds may be stimulated to germinate. These small plants can be removed manually (pulled). Neither method is likely to be effective without combining other integrated methods, such as herbicide application.

Biological control: Several species of insects known to control Scotch broom in its native habitats have been introduced in California; none of these have shown long-term effectiveness. A twig mining moth, a seed weevil, and a shoot tip moth are available for control of broom. The twig mining moth and seed weevil have become established within Idaho, Oregon, and Washington and have shown slight to moderate control in some areas. Research on the insect fauna on Scotch broom in England has shown that there are 9 Lepidoptera, 5 Diptera, 1 Hymenoptera, 7 Coleoptera and 13 Hemiptera which regularly feed on broom. At present only 10 of these European broom insects are found in North America and only 5 are present in California. Given such a diverse insect fauna, there is still potential for introducing other species to help control broom. Livestock grazing as a control measure may be effective, although broom is slightly toxic and unpalatable to some livestock. The continued removal of the tops of seedlings and resprouts by grazing animals prevents plant development and seed formation and gradually weakens the underground parts. Grazing must be continued until the seed bank is eliminated, as the suppressed plants return quickly after livestock is removed. Sheep and goats have been effective for grazing broom.

Chemical control: Herbicide application may be most effective where weed infestation is very dense and needs to be controlled. Various broadcast herbicides, including 2,4-D, picloram, glyphosate and triclopyr have been effective, but must be used in controlled circumstances, with careful attention being paid to desirable vegetation that may also be affected.

In general, when using the broadcast application method, plants should be sprayed in full leaf. Control results may be limited if plants are sprayed when the leaves are developing or when plants are in full flower before leaf development. The best results have been obtained when plants are in the seed head stage in late summer and early fall.

Spot Treatment: Spot treatment consists of manually applying herbicides to individual plants or small clumps of plants (such as stump resprouts). Spot herbicides, applied to either stems or cut stumps, are labor intensive but have proven to be effective.

Cut stump treatment: Herbicides are directly applied to the live tissue of freshly cut stumps. Application must occur within 5-20 minutes of cutting to ensure effective control.

**More information can be found in the
PNW Weed Management Handbook**

Use pesticides with care. Apply them only to plants, animals, or sites listed on the label. When mixing and applying pesticides, follow all label precautions to protect yourself and others around you. It is a violation of the law to disregard label directions. Store pesticides in their original containers and keep them out of the reach of children, pets, and livestock.

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