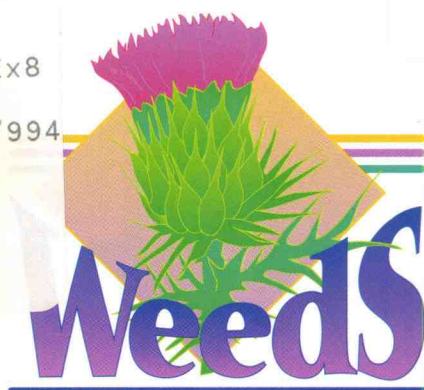


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Scotch Broom

Cytisus scoparius (L.) Link.

B. Parker, G. Miller, and L.C. Burrill



Scotch broom was introduced as a garden ornamental by early settlers of the Pacific Coast. It has spread far beyond the bounds of cultivation and now covers many acres west of the Cascades from British Columbia to California.

In California, it has spread across more than a half-million acres of rangeland. Scotch broom is moving rapidly into forest lands of western Oregon and Washington, where it is interfering increasingly with re-establishment of conifer seedlings on harvested lands. Scotch broom also is being found more frequently in areas east of the Cascades.

Wherever it grows, this aggressive plant spreads to form pure stands at the expense of desirable forbs, grasses, and young trees. Because it is a threat to native plant species and indirectly to animals that feed on the displaced plants, Scotch broom is a Class B noxious weed in Washington and Oregon.

Scotch broom has plenty of help from people to move it to new sites. Its seed is a regular hitchhiker on vehicle tires, heavy equipment, and in infested gravel.

Locally, Scotch broom spreads slowly but persistently.

Seedpods split suddenly at maturity and eject the seeds.

Also, it is reported that ants aggressively collect the seed of Scotch broom, assisting in dispersal. Birds also assist with spread, but how well the seeds survive digestion varies with the species of bird.



Figure 2.—Spanish broom.



Figure 1.—Scotch broom.



Figure 3.—French broom.

Larry C. Burrill, Extension weed specialist, Oregon State University; Bob Parker, Extension seed scientist, Washington State University; and Glenn Miller, agronomist, Oregon Department of Agriculture.

Benefits of Scotch Broom

Scotch broom is an attractive plant and the bright yellow flowers are popular with many people.

Nitrogen fixation in broom occurs on root nodules. Actual amount of nitrogen fixed depends on temperature, moisture, and soil pH. Most of the nitrogen produced is used by the broom plants and becomes available to other plants only after the broom dies.

Identification

Scotch broom is a perennial evergreen shrub in the legume (*Fabaceae*) family. It reaches heights up to 10 feet and has stiff, angled, more or less erect, dark green, broom-like branches. Many branches are leafless or have few leaves. Upper leaves are simple, but lower leaves are trifoliate (three-parted).

The bright yellow flowers are about $\frac{3}{4}$ inch long, shaped like pea flowers, and bloom from April to June. The brown or black pods are flat with hairs on the margins only. Each contains several seeds. Seeds are oval, about $\frac{1}{8}$ inch long, dark greenish-brown, and have a shiny surface. Seeds can last for 60 years in the soil.

Toxicity

Scotch broom has been reported by Europeans to be toxic to livestock (livestock loss is rare in the U.S.). Scotch broom contains small amounts of the toxic quinolizidine alkaloids sparteine and isosparteine. These toxins probably are

found in all parts of the plant. Children develop nausea and vomiting from sucking on the flowers of French broom, a related species.

Related Brooms

There are several other brooms in the Pacific Northwest that have potential to be weedy and spread, but they are limited in distribution.

Identification and naming of brooms in the literature has undergone steady change, resulting in considerable confusion. It is important to recognize that there are other brooms in the Pacific Northwest and that different names for the same plants will be found in the literature. There also is a great number of ornamental brooms that may become weedy, but many do not produce seeds.

Portuguese broom *Cytisus striatus* (Hill.) Rothm.

Portuguese broom is a Scotch broom "look-alike," except the pods. Pods are inflated and hairy all over, giving the plant the appearance of being covered with pussy willow buds. Stems are more silvery, but this is difficult to distinguish until after leaves and flowers fall off.

Distribution is limited, but a lot of Portuguese broom may be misidentified as Scotch broom. Sightings could increase with correct identification.

French broom *Genista monspessulana* (L.) L. Johnson.

Sometimes called *Cytisus monspessulanus* L.

Plants of French broom are very leafy and retain their leaves the entire year. All leaves

are trifoliate, whereas Portuguese and Scotch brooms have simple leaves or trifoliate leaves only on the lower part of the plants. Blossoms are yellow, smaller than those of Scotch broom, and appear well before—in March and April. Stems are finer and not as erect as those of Scotch broom.

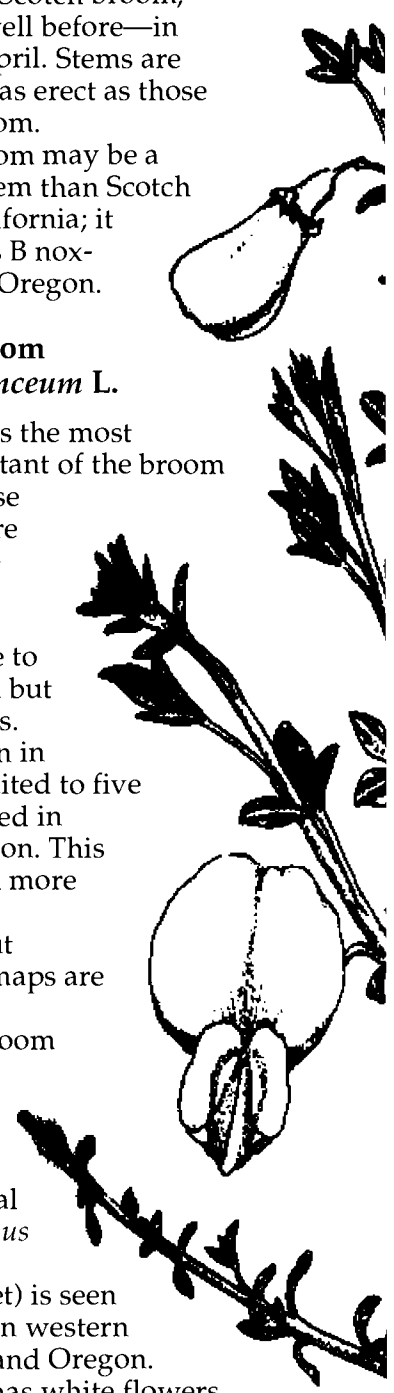
French broom may be a greater problem than Scotch broom in California; it also is a Class B noxious weed in Oregon.

Spanish broom *Spartium junceum* L.

This plant is the most drought-resistant of the broom species. Coarse thick stems are round and almost leafless. Flowers are similar in size to Scotch broom but less numerous.

Distribution in Oregon is limited to five sites, all located in western Oregon. This plant is much more abundant in California, but distribution maps are unavailable.

Another broom called white Spanish broom (sometime white Portugal broom) (*Cytisus multiflorus* (L'Her.) Sweet) is seen occasionally in western Washington and Oregon. This species has white flowers and rarely produces seeds. Although the names are similar, the plants are quite different.





Prevention

Little can be done to stop the natural local spread of the brooms, but the spread by humans can be reduced. Movement of equipment from infested sites is a common means of spreading Scotch broom. This can be reduced by regular and thorough cleaning of equipment before it leaves a site. Early detection and control of broom plants in previously uninfested sites is crucial.

Control

Biological Control

Domestic goats are reported to browse Scotch broom without apparent ill effects.

Given time, goats will probably control a patch of Scotch broom if the plants are not too tall.

A twig-mining moth, *Leucoptera spartifoliella*, was introduced in the 1970s, but was already in Oregon, perhaps as a contaminant on ornamental Scotch broom. The moth is

found throughout the Willamette Valley, but it is heavily parasitized and largely ineffective.

The seed weevil *Apion fuscirostre*, introduced in 1983, has established at many sites throughout western Oregon. Larvae consume the seeds and may assist in slowing the spread of the plant but

will not reduce an existing stand.

The shoot tip leaf tying moth *Agonopterix nervosa*, an accidental introduction in the 1920s, has been found at most sites. It also occurs on gorse. Many non-native insects have been found to feed on Scotch broom, but as yet none appear promising for significant control.

Mechanical Control

Plants can be controlled by grubbing out the crowns. After removing existing large plants, repeated cultivation will destroy seedlings of this weed; therefore it is not found in cultivated crops. Rotation of pastures or perennial plantings to cultivated crops for 1 to 2 years reduces problems. The long-lasting seed provides a regular source of new plants that must be controlled.

Periodic mowing will reduce seed production but it tends to encourage branching until a meadow of Scotch broom plants is produced.

Fire often is an inadequate control method for the brooms. Brooms do not burn readily and will not carry a fire unless previously desiccated.

Chemical Control

Selective herbicides are available for control of the brooms. Control with herbicides or any combination of methods requires follow-up measures.

Herbicide registrations change frequently; therefore, this publication does not contain specific herbicide use instructions. Registered uses are summarized each year in the *Pacific Northwest Weed Control Handbook*.



Figure 4.—Portuguese broom.



Figure 5.—Scotch broom green seedpod.



Figure 6.—Scotch broom brown seedpod.

Photographs provided by Larry Burrill, Extension weed specialist, Oregon State University. The black-and-white illustration was reproduced, with permission, from La Rea Dennis, *Gilkey's Weeds of the Pacific Northwest* (Corvallis, OR, Oregon State University, 1980); © La Rea J. Dennis.

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