

**WRITTEN FINDINGS OF THE
WASHINGTON STATE NOXIOUS WEED CONTROL BOARD
(NOVEMBER 1997, updated May 2006)**

Scientific Name: *Spartium junceum* L.

Common Name: Spanish broom

Family: Fabaceae (Leguminosae)

Legal Status: Class A

Description and Variation: Spanish broom is a perennial, evergreen shrub that can reach 6 - 10 feet in height. The erect, bright green stems are round with a central spongy pith, similar to *Juncus* (rush) stems (Nilsen, 2000) and are leafless most of the time, with leaves only appearing between February and early June, at least in California (Nilsen, 2000). Leaves are alternate, lance-shaped and less than 1 inch long, with a glabrous (hairless) topside and hairs on the leaf underside. They are also simple and entire, as opposed to the three-lobed compound leaves of Scotch broom. Like the plant's stems, the leaves are also bright green. Flowers are fragrant, bright yellow and pea-shaped, approximately 1 inch long. They grow in clusters at the branch ends, on stalks that can be 18 inches long. Bloom time is between July and frost. Fruits are hairy seed pods, flat and linear, up to 3 inches long.

S. junceum looks similar to and invades similar habitat as *Cytisus scoparius* (Scotch broom). They can be differentiated by stem, leaf, and flower characteristics:

	<i>Spartium junceum</i>	<i>Cytisus scoparius</i>
Stem	Round	Sharply angled
Leaves	Simple, lanceolate	Trifoliolate
Flowers	Borne in clusters;	Borne in solitary axils along raceme;
Bloom time	July-frost	April-June

Spartium junceum is the only species of this genus.

Economic Importance: *Detrimental:* *S. junceum* is a close relative of *Cytisus scoparius*, Scotch broom, which is already a serious weed problem in Western Washington. This species is capable of crowding out desirable native plants. Spanish broom is considered a potential fire hazard in California, when mature plants form dense, woody undergrowth in hard to reach, hilly areas (Nilsen, 2000). All parts of the plant are poisonous if eaten. Genetic analyses of *Xylella fastidiosa*, a bacterium that causes Pierce's disease in grapevines, revealed that *S. junceum* populations adjacent to vineyards in southern California were also hosts to this plant disease, and that the glassy-winged sharpshooter, *Homalodisca coagulata* (Say), served as a vector between the different species (Costa et al., 2004)

Beneficial: Introduced as a garden plant, or ornamental. Spanish broom is used as a bank cover in areas with poor, rocky soil. The flowers yield a yellow dye. The plant is used for fiber, and for weaving and cordage in southern France and Spain.

Habitat: Spanish broom is the most drought resistant of the broom species. It establishes in areas with full sun and limited water. Its nitrogen-fixing abilities enable it to colonize nutrient-poor soils including volcanic lavas in its native Mediterranean region (Quatrini et al., 2002). This species is common in disturbed areas, eroded slopes, roadsides, trails, state parks, riverbanks, and vacant lots in California (Nilsen, 2000).

Geographic Distribution: *S. junceum* is native Mediterranean regions in Macronesia, Northern Africa, Western Asia, Caucasus, and Southeastern and Southwestern Europe (USDA/GRIN, 2006). Spanish broom was introduced as an ornamental for sale in a San Francisco nursery in 1858 - it has since naturalized in California. Distribution of Spanish broom is not well known, partially because of the resemblance to Scotch broom. In Oregon, all Spanish broom infestations are subject to control. *S. junceum* has established in California, Oregon, and Hawaii (USDA, NRSC, 2006).

History: Washington sites include roadsides along freeway interchanges in Kelso; Montlake Cut area in King County; outside of Lacey in Thurston County; in Clallam County; and on the roadside of US 101 in Hoodport, Mason County.

Growth and Development: Spanish broom is an evergreen perennial. It establishes in disturbed areas.

Improper fire management may contribute to reinvasion.

In its native Sicily, nodulation occurs by a diverse assemblage of rhizobia (Quatrini et al., 2002).

Reproduction: Spreads by seed or stump sprouting. Seeds germinate without any pretreatment. More information needed on seed production, dispersal, viability, germination and seedling establishment. (Hoshovsky 1986).

Response to Herbicide: It is recommended to apply herbicides when the plant is in full leaf, with the best results occurring when sprayed in late summer and early autumn (Matthews 1960 as cited in Hoshovsky 1986).

2,4-D is an herbicide commonly mentioned in broom control. Broom is susceptible to picloram (Allo 1960, Elliot 1976, Watt and Tustin 1976, Balneaves 1981 as cited in Hoshovsky 1986).

Response to Cultural Methods: Broom seeds buried more than 10 cm deep do not germinate. Future site disturbance will lead to germination and seedlings. (Hoshovsky 1986).

Response to Mechanical Methods: Hand pulling is effective. Remove the whole root, as fragments will resprout. Mowing will encourage resprouting from the root crowns. Mowing is effective if followed by herbicide application.

Biocontrol Potentials: Conflicting reports of control by goat grazing. Chickens will reduce the seed bank; seeds are digested and will not germinate. A broom aphid (*Aphis cytisorum*) and *Eriophyes spartii* both feed on Spanish broom. (Hoshovsky 1986)

Rationale for Listing:

Spanish broom is a close relative of Scotch broom (*Cytisus scoparius*), a serious weed problem in Western Washington. The aggressive replacement of native plants and habitats, prolific seed production and lack of any natural controls are characteristics of Spanish broom. This species has naturalized in many areas of the west, and is a Class B Noxious Weed in Oregon. The limited populations and distribution of Spanish broom in Washington State meet the requirements for a Class A Noxious Weed.

References:

- *Bailey, L. H. and E. Z. Bailey. 1976. Hortus Third. MacMillan Publishing Co., NY. P 1062.

- *Cronquist, A., A. H. Holmgren, N. H. Holmgren, J. L. Reveal and P. K. Holmgren. 1989. Intermountain Flora Vascular Plants of the Intermountain West, U.S.A. The New York Botanical Garden, NY. Vol. 3(B):12-14.

- Costa, H.S., Raetz, E., Pinckard, T.R., Gispert, C., Hernandez-Martinez, R., Dumenyo, C.K., and D.A. Cooksey. 2004. Plant hosts of *Xylella fastidiosa* in and near southern California vineyards. Plant Disease 88(11): 1255-1260.

- *Grieve, M. 1995. Broom, Spanish. A Modern Herbal Home Page. Electric Newt.

- *Hoshovsky, M. 1986. *Spartium junceum* (Spanish broom). The Nature Conservancy - Element Stewardship Abstract. The Nature Conservancy. Arlington, VA. Pp.17.

- *McClintock, E. 1979. The Weedy Brooms - Where Did They Come From? *Freemontia* Vol 6 (4):15-17.

- *Mountjoy, J. H. 1979. Broom - A Threat to Native Plants. *Freemontia* Vol. 6 (4):11-15.

- *Parker, B., G. Miller and L.C. Burrill. Revised July 1994. Pacific Northwest Extension Publication: PNW 103, Scotch Broom, *Cytisus scoparius*. OR, WA and ID.

- Quatrini, P., Scaglione, G., Cardinale, M., Caradonna, F., and A.M. Puglia. 2002. Bradyrhizobium sp. nodulating the Mediterranean shrub Spanish Broom (*Spartium junceum* L.). *Journal of Applied Microbiology* 92: 13-21.

- *Sunset Books. 1988. Sunset Western Garden Book. Lane Publishing Co., Menlo Park, CA. P531.

- USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network – (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, MD.

URL: <http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?35189> Accessed 5 May 2006.

* *References available from the Washington State Noxious Weed Control Board Office in Olympia.*