

## BROOM SPECIES

French broom (*Genista monspessulana*)

Scotch broom (*Cytisus scoparius*)

Spanish broom (*Spartium junceum*)

Legume or Pea Family (Fabaceae)

### DESCRIPTION

These three broom species are invasive shrubs that grow in grasslands, scrub, and woodland habitats. Once introduced, they can quickly colonize disturbed areas, trailsides, and stream-banks, and sometimes spread into wildlands along roads. Broom species are somewhat shade tolerant, though in general Scotch broom is found in drier, sunnier locations. Individual shrubs have been known to live up to 17 years.

French broom usually grows 6 to 10 feet tall, but can grow as tall as 15 feet. Mature plants are evergreen, especially along the coast. Leaves grow in groups of three. Each leaf is about a half-inch long, or larger in shadier woodlands.

Scotch broom also grows 6 to 10 feet tall. Young plants are easily distinguished from French broom by the flowers (see below) and by the ridges on their dark green stems. Scotch broom leaves are smaller and fewer than French broom, giving the plant a wiry look.

Spanish broom is distinguished from the other types of broom by its smooth, round stems, single leaves, and large flowers. Leaves are shed during summer drought, giving a very stick-like appearance. Its taproot can reach depths of 6 feet, making Spanish broom the hardest of the three brooms to remove.

### REPRODUCTION

French broom flowers start to appear in March (earlier in sunny locations) and continue to bloom through May or even July. They are yellow, less than a half-inch in size, and have the familiar pea flower shape with banner, wing, and keel petals. The flowers grow from the main stem in bunches of 4 to 10. In June and July,



*Genista monspessulana*

inch-long fuzzy green seed pods appear, turning dry and brown in late summer. Each pod bears several to many shiny black seeds.

Scotch broom flowers are similar to those of French broom, but they are larger and deeper yellow. Seed pods are similar, too, except that they have hairs only on their seams, instead of being fuzzy all over.

Broom seed pods, when ripe, burst open explosively and propel seeds up to 12 feet from the plant. Starting in the second year of growth, seed production is prodigious; in a single square-meter plot, researchers have counted more than 6,700 seeds! Furthermore, the seeds persist, remaining viable for at least 5 years and potentially for decades. Broom seeds often germinate with early winter rains, establishing a flush of new seedlings from December through July.

## IMPACT

Dense stands of broom change the structure of the invaded plant community, often increasing fire hazards by creating a “ladder” of woody material that can carry fire into trees. Brooms provide poor forage for native wildlife. The leaves and seeds are toxic. As nitrogen-fixing legumes, they can enrich soil nitrogen, which in turn can promote the growth of other weedy plant species once the broom has been removed.

## KEY FACTORS

- u Prodigious seed production.
- u Seeds remain viable for many years, potentially decades.
- u Resprouts from stumps and root crown when cut.

## TREATMENT OPTIONS

- u Pull shrubs by hand or with a Weed Wrench, or dig with a Pulaski, pick, or shovel between January and May, when the moist ground makes it easier to remove the roots, and before another generation of seeds has developed. Repeated pulling of successive generations is currently thought to be the single most effective method of removing broom.
- u Cut shrubs to just above ground level using a pruning saw, loppers, or brushcutter, ideally during the dry season so that the stumps become more stressed. Cutting, rather than pulling, has the advantage of minimizing soil disturbance. Untreated cut stumps *will* resprout and must be cut repeatedly (see Follow-Up, below.) Alternatively, cut the stems about 2 inches above ground level, then **girdle** the stump by peeling the bark off the stems—like peeling a banana—down to ground level. This reduces resprouting and works best on medium to large French broom plants.
- u Cut stems, using loppers, to about 2 inches above ground, and grub out the roots.
- u Cut and treat the stumps with herbicide.

- u **Girdle** the trunk of large broom plants with a small hand tool such as a paint scraper. (Warning: while girdling minimizes soil disturbance, standing dead broom will increase, not reduce, fire hazards. Also, broom left standing will be in the way when you return for follow-up.)
- u **Scrape** seedlings with a hula hoe.
- u **Flame** seedlings in monoculture with a propane torch (weed blancher). This is most effective and efficient when the seedlings have only their two seed-leaves, but can also work on seedlings with true leaves, up to a few inches tall. (See Follow-Up for more on flaming.)

## FOLLOW-UP

Wherever mature plants are removed, emerging seedlings will also have to be removed for *at least* the next 5–8 years and probably longer. In the first year after removing mature plants, the next generation will be too small to pull, but this dense flush of seedlings is effectively controlled by flaming with a propane torch. A single pass with the torch will wilt and kill seedlings. Controlling broom plants when they are seedlings will spare you a great deal of work in pulling plants the second year after removing mature broom.

Broom is not eradicated from your site until the seedbank is exhausted, so be vigilant to prevent subsequent generations from producing seed. Broom is easiest to spot when the bright yellow flowers are present, but be sure to remove it before the seed pods mature.

Broom resprouts from the base when cut: all except seedlings and old, senescent plants can resprout after cutting if not treated with herbicide. Resprouting stump shoots can be cut or weed-whipped the following year, either in late spring or in the dry season. Repeat this treatment annually until the plants’ energy resources are depleted.

**DISPOSAL**

Pulled plants that have not produced seed can be piled on-site to decompose. Alternatively, they can be hauled off-site and chipped or recycled as green waste. One innovative use of broom waste has been to bundle the pulled plants to create 8- to 12-inch wattles that can be secured to slopes to prevent erosion.

Plants that have gone to seed should be piled on tarps or bagged to reduce the number of seeds falling to the ground and germinating.

Putting broom-with-seed piles in deep shade will also help inhibit germination. Tarps should be visited annually, and eventually removed when materials have decomposed.

**INTERESTING FACTS**

French broom originates in the Mediterranean and was reportedly introduced to the Bay Area as an ornamental in the mid- to late 1800s. Scotch broom is native to much of Europe and the foothills of North Africa.

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## Notes