



# GORSE

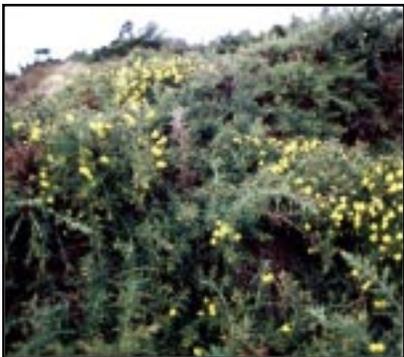
(*Ulex europaeus* L.)

**G**orse is a dense, spiny, evergreen legume shrub, which resembles Scotch broom. It grows up to 10 feet tall with erect, angular stems. Spreading branches end in a sharp spine and have stiff spinelike leaves,  $\frac{1}{2}$  to 2 inches long. The yellow flowers are shaped like those of peas,  $\frac{1}{2}$  to  $\frac{3}{4}$  inch long. Flowers grow in clusters near the ends of branches. Gorse primarily flowers in the early spring, though plants may flower throughout the year depending on their location. The plants produce seed prolifically, and the bursting pods scatter seed for several feet. Animals, machinery,

and water also carry the seed. Seeds have a hard coat and will remain viable in the soil for years. Individual plants grow outward, forming a central area of dry, dead vegetation. The oil in the plant, combined with the dead dry-matter, creates a serious fire hazard. Dormant seed resists destruction by fire and germinates more rapidly following a fire.

Introduced from Europe as an ornamental, gorse adapts to regions of mild winters and sandy or gravelly soils having abundant moisture. In the western United States, it appears from the

Olympic Peninsula in Washington south through Mendocino County, California. Clackamas and Douglas counties in Oregon report infestation in inland areas. Gorse propagates predominantly by seed and is slow in becoming established. Where gorse adapts it increases rapidly, crowds out other vegetation, and forms dense thickets that render land almost worthless. Few other plants will dominate an area so completely. Usually gorse



*Established gorse plants.*



*Gorse flowers.*



*Stiff spinelike leaves of gorse.*

becomes established on nontillable land and in inaccessible places (fence rows, river banks, and rough sites) making control difficult. Its persistence, constant fire hazard, and ability to encroach on agricultural and recreational lands make it a troublesome brush pest.

## CONTROL

You may be able to eradicate an infestation limited to a few plants or a small area.

Once gorse becomes established with seed deposited in the soil, eradication is difficult, if not impossible. An effective control program requires integrating several methods. Degree of infestation, type of land infested, and use to be made of the land following control will influence selection of the best practices.

**Biological control.** A weevil, *Apion ulicis*, released on gorse in 1956, is widespread and has become abundant in most areas. Larvae feed in developing seeds. However, even the large population of weevils has brought little or no reduction in gorse. Effects on the plant itself are minor although the insect destroys

large numbers of seed. The seed supply in the soil seems far from exhausted. The gorse spider mite (*Tetranychus lintearius*) has been widely introduced but has been marginally effective because of predation by other arthropods. Research is underway in Hawaii with other insects, including two moths (*Agonopterix ulicetella* and *Pempelia genistella*) and a thrips (*Sericothrips staphylinus*), as possible new control agents on gorse in the Pacific Northwest.

**Cultivation**, where possible, is one of the best methods of controlling gorse. Cultivation that removes old gorse crowns and brings them to the surface is the most successful. Growing annual crops for 2 or 3 years before seeding to permanent pasture destroys many gorse seedlings.

**Grazing.** Seedling gorse plants 2 to 3 inches high are palatable to livestock, which will eat them if the pasture is heavily stocked for a short time. Spray or mow frequently to control plants that escape livestock grazing. Herbicides often kill clovers that are in the pasture mixture.

**Burning.** Burning old plants will destroy some

existing gorse growth. If possible, start control of large patches with a field burn. Provide wide safety margins on the edges and have fire control authorities inspect the fields before igniting them. Windrow remaining plant materials and burn again. The most effective burns occur under conditions of low humidity. If conditions are unfavorable for a good burn, you can spray the area using a mixture of a desiccant and oil to dry the foliage. Always check local regulations before burning.

Cutting or burning the top growth usually does not kill gorse-plant crowns. Either spray regrowth from crowns or remove them by means of heavy equipment. Spraying the regrowth after it is 12 to 18 inches tall gives best control of old crowns. Spraying smaller regrowth gives poorer control.

**Chemical control.** Several herbicides will control gorse. Consult the latest edition of *The Pacific Northwest Weed Management Handbook* for suggested herbicides that may fit your specific situation. If you select a herbicide, read and follow all label precautions, and apply only according to label instructions. Research and practical experience show that full spray

coverage of gorse plants is as important as the choice of herbicides. Adding a good quality surfactant usually improves herbicide activity.

## MANAGEMENT

While gorse does not thrive in shaded areas, take precautions to keep gorse from invading them. In pastures, using a good fertilization program in conjunction with proper grazing management may be all that is needed to hold back gorse invasion. But, if gorse is already established, you may have to replant the area to obtain long-term benefits. If the gorse infestation is thick, remove it before starting any planting operations. Apply a herbicide before burning or bulldozing to reduce regrowth of existing crowns. You may need to use a grader or bulldozer to remove standing gorse skeletons that remain after burning.

Some growers prefer to burn gorse, then seed promptly to annual ryegrass. Grass slows gorse seedling invasion and provides fuel for reburning a year later. The second burning destroys more of the remaining unburned brush.

Plant the area to the desired species as soon as possible after controlling the gorse. Control gorse seedlings and regrowth from old gorse crowns in new plantings using a herbicide or another appropriate method. Mowing small gorse plants will keep them short enough to allow animals to feed on the new shoots. Unfortunately, rather than killing the plants, grazing encourages new plants to grow from the roots or crowns.

### **Pasture establishment.**

When using a drill for seeding, prepare a good seedbed. Seed the land to grass and clover immediately after preparation so the seeded vegetation will provide competition against new gorse seedlings. However, the presence of clover in a pasture will limit any herbicide option to control later emerging gorse. Maintain soil fertility, according to a soil test, by making annual applications of nitrogen and phosphorous fertilizers. As the new pasture becomes established, control gorse seedlings by heavy grazing or selective herbicides. An option is to delay seeding for a season following seedbed preparation to allow germination of gorse seed near the surface. Control

seedlings using tillage or herbicides. In the second season, when you seed the pasture, keep soil disturbance to a minimum to avoid bringing more gorse seed to the surface. Then, in some cases, you can seed the gorse area using a rangeland drill. The rangeland drill eliminates the need for seedbed preparation, thus minimizing the gorse seedling problem.

You can use an annual legume such as subterranean clover in the pasture mix. Apply herbicides for gorse control after the subclover has set seed and the plants have died. Some herbicides leave residues in the soil that may kill newly germinated legumes.

**Reforestation.** If you plan to plant trees, transplant the area in the spring to the largest tree seedlings available (three-year-old seedlings, 2-1 transplants, or larger.). Take precautions to protect the planted area from fires on adjacent areas.

By Robert Parker, Ph.D., Washington State University Cooperative Extension weed scientist, WSU Prosser.  
Photos by Stott Howard and Doug Belz.

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. If pesticides are spilled on skin or clothing, remove clothing and wash skin thoroughly. Store pesticides in their original containers and keep them out of the reach of children, pets, and livestock.

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PNW379