

Understanding and Controlling Gorse

*Most of the information contained in this Guide was taken from the publications cited in the **References** section below, all of which are available off the internet.*

Background

Gorse (*Ulex europaeus*), sometimes referred to as *Irish furze*, is a highly invasive shrub native to Europe that was intentionally introduced to Bandon in the 1870s. It is closely related to another invasive weed, Scotch broom (*Cytisus scoparius*), and they are often confused as each produce varying shades of bright yellow blossoms from late fall to early spring. Both pose serious threats since their seeds survive for decades in the soil and are easily transported by vehicles, heavy equipment and human activity. Unlike Scotch broom, gorse has thick, sharp spines (thorns) and poses a fire danger due to its high natural oil content. Large infestations of gorse pose an even higher risk due to the accumulation of dead branches and material in the center of the bushes. Gorse and Scotch broom easily out-compete native vegetation when forests are cleared, or open lands are disturbed, and spread rapidly along roads and highways. While many of the control strategies outlined in this guide are applicable to Scotch broom, the focus will be on gorse due to its abundance and huge ecological threat along the southern Oregon coast.

Gorse Characteristics

Gorse is a legume, a member of the pea family. In addition to its pea-like yellow flower that typically blooms from late November through March, it produces large quantities of seeds which have a hard, water-resistant coating allowing them to remain dormant in the soil for 30 or more years. Each seed pod contains 4-5 seeds which are ejected (up to several yards) when the new pods burst open each year. Seed counts in gorse stands are extremely variable, but annual production can average 400-500 seeds/square yard. A continuous mature stand of gorse can generate a seed bank containing 250 million seeds/acre. Gorse can spread into new areas from seed movement in water, wind, soil, machinery/vehicles, and footwear.

Gorse fixes nitrogen in the soil while establishing an extensive root system. This enables it to colonize and dominate in areas with poor soils. It prefers moderate to full sunlight and therefore does not typically invade shaded or forested areas. In heavily infested sites, the soil is often bare between individual gorse plants, which can increase erosion on steep slopes where gorse has replaced grasses and forbs (1). Young gorse plants begin producing flowers/seeds when they are about 18 months old, and once established can live 30 years or longer.

Control Strategies

Once gorse becomes established, it is extremely difficult to eradicate. **The key to controlling its spread is to prevent flowering or at least reduce its ability to set seeds.** Only by eliminating the seed bank can gorse be contained. All control programs require many years of follow-up and vigilance. While attacking well-established gorse colonies or infestations is critical to reduce the threat from fire and economic damage, it is equally vital to prevent the spread of gorse into new areas and on properties where it already exists. Since approved biological controls (e.g., spider mites and seed weevils) up to now have not been successful in controlling gorse, and new controls are still in

the development/testing phase, other methods including a combination of manual and mechanical controls, along with chemical controls (herbicides), are most effective. While grazing by goats or sheep and mowing are two ways to keep young gorse plants from growing and setting seeds, they do not kill the plants, allowing the root system to develop. Once stopped, gorse will quickly regenerate and flourish. *** Use of controlled burning as a gorse control tool must be carefully assessed and locally coordinated due to the highly flammable nature of gorse and resulting risk of high fire danger. In addition, fire stimulates gorse seed germination (carpets of seedlings can be expected) that require a well-timed, post-fire treatment plan.

Key points

- **Prevention** is the most cost-effective means of control. If you spot new gorse plants on your property, pull or treat them to prevent further spread. (Note: in open areas where forests are adjacent, young gorse plants can appear similar to conifer seedlings.)
- Tackle outlying, **newly emerging infestations** to prevent young plants/seedlings from setting seeds and providing a means to further advance. Young plants (see pictures) are more easily pulled by hand or weed puller/wrench, especially when the soil is damp. **Be sure to wear thorn-resistant gloves and clothing.** Try to get the entire root crown as it can regenerate otherwise. Hand pulling can eliminate the need to use herbicides.
- **Herbicides.** Herbicides should be applied during periods of active growth, usually in the spring right after flowers drop. Other times may be effective. Other times may also be effective. Do not spray when plants are in full flower, or when bees are present. A number of herbicides have been recommended for use on gorse, including glyphosate, triclopyr, and triclopyr + 2,4-D. For a complete listing, including brand names, rates/methods of application, times to apply, and precautions, please refer to the Pacific Northwest Weed Management Handbook (<https://pnwhandbooks.org/weed/problem-weeds/gorse-ulex-europeaus>). **All herbicides must be used in accordance with the label instructions**, including wearing appropriate gloves and protective clothing. For information on the toxicity, half-life, and environmental fate/effects of these herbicides, please refer to the National Pesticide Information Center fact sheets (<http://npic.orst.edu/ingred/specchem.html>).
- **Getting the best results from foliar spraying.** For herbicides to be effective, it is crucial to thoroughly wet the entire plant. A surfactant, or wetting agent, can be combined to increase adherence, but should only be used in accordance with the label instructions. Be particularly careful when spraying near water (again, follow label instructions/precautions). If the use of herbicides is of concern, or if you want to limit the amount applied, larger plants can be cut at the base of the main stem and the stub painted or sprayed with herbicide. This is often referred to as the “cut-stump” or “hack and squirt” method. A gel formulation of herbicide can also be used. While this greatly reduces the amount of herbicide used and limits harm to adjacent native plants or grasses, both the liquid and gel must be applied immediately or the chemical will not be absorbed sufficiently to kill the plant. If herbicide is not applied, the plant will re-sprout from the crown in greater density.
- **Mechanical control.** In areas where gorse infestations are extensive, mechanical clearing is the most effective way to attack it. The use of bulldozers and excavators are effective in removing large gorse plant colonies and much of their root systems, but will likely leave root fragments and large seed banks from which new plants will emerge. This will require on-going annual follow-up controls. In addition, disposal of the gorse plants by burning or other means must be done in a safe manner, and one that doesn't transfer seeds into new areas. Thorough cleaning of equipment afterwards is paramount.

- A more practical and less invasive form of mechanical control is the use of **mulchers or thrashers attached on the arm of excavators/tractors** to chop and grind gorse plants while leaving a layer of mulch in place. While new gorse shoots will emerge from the cut root crowns and seed bank, the mulch will help reduce the amount, as well as the amount of herbicide needed for follow-up control.
- **Manual control.** Where infestations are small or more manageable, or where steep terrain or cliffs make it impossible for mechanical equipment to operate (or there is concern over soil destabilization and increased erosion), hand cutting with heavy loppers, chainsaws, or pole saws can be employed. Again, be sure to wear heavy, thorn-resistant gloves/clothing in addition to eye/face/head protection. As with mechanical clearing, safe disposal of the cut bushes and a follow-up control program are critical. Also, combining this method with the cut-stump application of herbicide described above, greatly reduces re-sprouting of the root crowns.

References

- (1) Noxious Weed Integrated Vegetation Management Guide, IVM Technical Bulletin: Gorse. September 2000.
- (2) King County Noxious Weed Control Program, Best Management Practices: Gorse. April 2011.
- (3) Invasive Weeds in Forest Land: Gorse. Oregon State University, 2008.
- (4) Weed Management Guide: Gorse. National Heritage Trust. An Australian Government Initiative. 2003.
- (5) Pacific Northwest Weed Management Handbook: Gorse. Oregon State University 2016.
- (6) Noxious Weed Policy and Classification System 2016. Oregon Department of Agriculture Noxious Weed Program.

For further Gorse Control Guidance, please read:

*Gorse Management: An Overview
and
Available Gorse Management Strategies*

documents can be found at: <http://gorseactiongroup.org>