

Appendix 1D
Sustained Control Pest Plant Information Sheets

Broom

Botanical Name

Cytisus scoparius

Family

Fabaceae (pea) family

Also known as

English or Scotch broom, *Sarothamnus scoparius*

Where is it originally from?

Europe, Asia Minor, Russia



What does it look like?

Erect, much branched, almost leafless, deciduous shrub to 2.5 m with a woody rootstock. Silky-hairy young twigs mature into woody, flexible green stems that are 5-ribbed and hairless. Leaves are divided into three sections (each 5-20 mm) that readily fall off the stems. Single or paired, golden-yellow (occasionally reddish), pea-like flowers (15-25mm) are produced from September to April and are followed by oblong green pods (30-60 mm) that turn black as they mature and eventually disperse seeds explosively, leaving empty coils hanging from the plant. Broom is a common sight from Taupo in the North Island, right down to Southland.

Are there any similar species?

Montpellier, Spanish and white broom. Tree lucerne, *Teline stenopetala*, and native *Carmichaelia* species are all similar. Alternatives: Check with your local garden centre for non-weedy varieties of broom that you can plant instead of this weedy one, or use another species such as miniature toi toi (*Chionochloa* species) or small ornamental flaxes (*Phormium* species).

Why is it a pest?

Broom is a prolific seeder that spreads rapidly, matures quickly, and colonises large areas, forming pure stands that dominate habitats. As it is a legume and can fix nitrogen in the soil, it can change the types of plants which can survive where it has been growing, disturbing the ecology of an area. It is a particular problem on riverbanks and lakesides, roadsides, forest tracks and firebreak areas. Tolerates warm to very cold temperatures, most well drained soil types, grazing, fire, and high to low rainfall.

How does it spread?

Explosive seed mechanism spreads seed 1-5 m from the parent plant, and they are also spread by machinery, soil and water movement, and possibly birds and feral pigs. Common seed sources include quarries, roadsides, forest tracks, metal dumps, fire breaks, exotic forests, skid sites, riverbeds, domestic gardens, and disturbed land.

What damage does it do?

Can form pure stands in many habitat types. Dominates low canopy habitats, preventing the seedlings of native species from establishing. Increased nitrogen in gumlands and other impoverished soil types may result in changing habitats and plant species being present to the detriment of specialised plants eg orchids, ferns, herbs, kauri, or can lead to further weed invasion.

Which habitats is it likely to invade?

River systems, shrublands, forest margins, low canopy habitats, coastline, tussockland, fernland, wetland, consolidated sand dunes, gumlands, regenerating and disturbed forest, and bare land.

What can I do to get rid of it?

Firstly establish plant is not native broom. Control only where broom is a recent threat, of low incidence or poses a high ecological threat.

1. Introduce biocontrol agents where possible - contact your regional council for more information.
2. Pull or dig small plants (all year round). Ensure minimum soil disturbance. Leave on site to rot down.
3. Stump swab (all year round): triclopyr 600 EC (50ml/L) or Yates Hydrocotyl Killer (250ml/L) or metsulfuron-methyl 600g/kg (5g/L).
4. Wick wipe (spring-summer): triclopyr 600 EC (200ml/L).
5. Spray (spring-summer): metsulfuron-methyl 600g/kg (7.5g/15L + penetrant (knapsack) or 35g/100L + penetrant (spraygun)) or Tordon Brushkiller (90ml/15L (knapsack) or 200-300ml/100L + penetrant (spraygun)).

What can I do to stop it coming back?

Resprouts after slashing. Colonises bare areas, reinvades after non-selective spraying, fire or soil disturbance. Not long-lived, relying on seedling replacement. Light lover, so is succeeded in tall canopy habitats by taller native species where their seedlings exist (not in kauri or tanekaha forest). These sites can be left, regeneration can be speeded by slashing, selective spraying or replanting of shade-creating species. Clear roads, metal dumps, quarries. Maintain pest and livestock control, as broom is not browsed as readily as native species and recovers more quickly from browsing.



Giant Buttercup

Botanical Name

Ranunculus acris

Family

Ranunculaceae

Where is it originally from?

Europe

What does it look like?

Growing from a sturdy rhizome, Giant Buttercup becomes a hairy perennial up to 1m tall. Seedlings are initially hard to identify but once the plant begins growing strongly in the early spring, the characteristic adult large, pointed leaves, with deep incisions, make for ready identification. This is further confirmed when the 25mm diameter yellow flowers begin to open in November and December.



Are there any similar species?

Creeping buttercup

Why is it a pest?

Giant Buttercup is a pervasive, difficult to control pastoral weed, particularly on dairy farms where cows avoid it because of its bitter taste. Plant populations tend to increase under dairy grazing pressure. Giant Buttercup also thrives after fertilizer applications and in some areas has become resistant to phenoxy herbicides, such as 24-D, MCPA and MCPB, after repeated applications. Other newer forms of herbicide, whilst having a controlling effect, do not eradicate Giant Buttercup and progress on finding an effective biological control agent has been slow. With Giant Buttercup seed being easily spread on the hooves and coats of grazing animals, on mowers and haymaking equipment, and in hay made from paddocks containing the plant, sustained vigilance is far and away the best option for property owners. An infestation of Giant Buttercup causes both reduced farm productivity and ongoing control costs.

How does it spread?

Seed is easily spread on the hooves and coats of grazing animals, on mowers and haymaking equipment, and in hay made from paddocks containing the plant.

What damage does it do?

Dairy and other cattle avoid grazing the plant and its surrounding pasture thus it reduces the pasture's stock-carrying capacity in proportion to its coverage.

What can I do to get rid of it?

For Flumetsulam based herbicides (e.g. Preside)

This product must be under the care of an approved handler when applied in a wide dispersive manner or used by a commercial contractor. Records of use must be kept under certain circumstances.

- Apply in the warmer months of the year prior to flowering
- Apply 65 grams of Preside per hectare
- Enhance control by addition of Uptake spraying oil at 500 mls per 100 litres of water
- Ensure all plants are sprayed thoroughly

For MCPB based herbicides

- Apply in the warmer months of the year prior to flowering over a 2 year period
- Apply 6 litres of MCPB per hectare
- Ensure all plants are sprayed thoroughly
- Repeat treatment in the following spring



Gorse

Botanical Name

Ulex europaeus

Family

Fabaceae family

Where is it originally from?

Europe

What does it look like?

Sharply spiny shrub to 2-3 m tall with woody erect or spreading stems which are many-branched in younger plants but become bare at the base as the plant gets older. Leaves are reduced to spines, new leaves less so. Spines are deeply furrowed. Pea-like yellow flowers (13-20 mm long) appear from May to November (occasionally all year round), followed by hairy seed pods (13-25 mm long) which turn black when mature and explode to release seeds.



Are there any similar species?

No.

Why is it a pest?

Produces massive numbers of long-lived seeds, matures and grows rapidly, and is versatile about habitat. Tolerates hot to cold temperatures, high to low rainfall, wind, salt, damage and grazing, and all soil types.

How does it spread?

Explosion of seed pods spreads seed up to 5 m from the parent plant, and seed is also spread by soil movement and road graders, contaminated machinery, animals, boots, stock food and lime. Hedges, roadsides, waste land, farms, quarries, forest tracks, metal dumps, fire breaks, exotic forests, skid sites, and riverbeds are all common seed sources.

What damage does it do?

Forms pure associations temporarily in many habitats, inhibiting the establishment of native plant seedlings. Increased nitrogen in poor soil types (eg. gumland, sand dunes) may change the types of species present and nature of habitats to the detriment of specialised plants, eg herbs, orchids, low ferns. Can have positive impacts on bared ex-forest sites as it acts as a nursery crop for native species, adds nitrogen, humus, windbreak and shade, and opens up when older and disappears when overtopped. Succession to native species may be less likely on dry sites.

Which habitats is it likely to invade?

River systems, shrublands, forest margins, coastline, tussockland, fernland, wetland, consolidated sand dunes, gumlands, cliffs, disturbed forest, exotic plantations, poor pasture, and bare land.

What can I do to get rid of it?

1. Introduce biocontrol agents wherever possible - check with your regional council for more information on this.
2. Stump swab: glyphosate (250ml/L) or metsulfuron-methyl 600g/kg (2g/L) or triclopyr 600 EC (250ml/L) or Tordon Brushkiller (100ml/L) or Vigilant gel.
3. Spray (spring-summer): triclopyr 600 EC (20ml/10L) or triclopyr 300 EC (40ml/10L).
4. Spray (autumn-winter): metsulfuron-methyl 600g/kg (5g/10L+ penetrant - knapsack) or (20g/100L + penetrant - spraygun) or Tordon Brushkiller (250ml/100L spraygun).
5. Frilling: With a sharp chisel or axe, make a deep cut into the sapwood at regular intervals around the base of the tree, taking care not to ring-bark the plant. Immediately saturate each cut with undiluted Tordon Brushkiller.
6. Injection method: As each hole is drilled saturate it with undiluted Tordon Brushkiller using a sheep drench pack with a spraygun.

What can I do to stop it coming back?

Stumps resprout quickly. Reseeds profusely, especially after fire, disturbance or non-selective spraying. Do not burn or graze. Only use glyphosate spray when all vegetation on site is to be bared for replanting (generally not recommended). Maintain humus layer. Sites with appropriate tall forest species present can usually be left to be overtopped, can speed by selective slashing, stump swabbing or planting. Maintain roadsides, cuttings and other vectors, check road gravel and fill.



Ragwort

Botanical Name

Jacobaea vulgaris

Family

Asteraceae (daisy) family

Also known as

Senecio jacobaea, tansy ragwort, St James' wort

Where is it originally from?

Europe, West Asia

What does it look like?

Smelly biennial or perennial (occasionally annual) herb to 30-120 cm tall, with a tap root (crown) with numerous fibrous roots extending 30+ cm. Wavy, lobed leaves (5-20 x 4-6 cm) emerge initially from a basal rosette, and stem leaves are deeply cut, clasp the stem, and have no broad terminal lobes. Erect, rigid stems (50-120 cm) are single (multiple in perennial plants), usually purplish and usually branch above the middle. Yellow, daisy-like flowers (up to 2 cm diameter) with golden yellow centres are produced from November to April and have 11-13 yellow petal-like florets in compact, flat-topped clusters at the ends of stems. Seeds are like thistle-down.



Are there any similar species?

Marsh ragwort (*Senecio aquaticus*) is a very similar exotic that has established in the wild. Also the native groundsel and fireweed *Senecio* species that are mostly unique to New Zealand are similar.

Why is it a pest?

Matures quickly, and produces massive numbers of viable, long-lived, widely dispersed seeds that can rapidly colonise bare spots, light gaps and margins in full or partial light. Tolerates very hot to very cold temperatures, very wet to moderately-dry conditions, most soil types, and a little shade.

How does it spread?

Wind spreads seeds over great distances, and they are also spread by water, soil movement, contaminated machinery, livestock, lime, clothing and hay.

What damage does it do?

Forms dense stands in disturbed and grazed areas, and can (usually temporarily) prevent the establishment of seedlings of native plant species.

Which habitats is it likely to invade?

Invades disturbed forest and shrubland, short tussockland, fernland, herbfield, wetlands, inshore and offshore islands, river systems, bare land, and coastal areas throughout New Zealand.

What can I do to get rid of it?

1. Weed wipe (spring-summer only): glyphosate (333ml/L + penetrant) or metsulfuron-methyl 600g/kg (5g/L + penetrant) or Tordon Gold (500ml/L).
2. Spray rosette plants (winter-spring only, before stem formed): 2,4-D (50ml/10 litres (knapsack) or 1-3 litres/ha in 300 litres water (boom spraying).
3. Spray: cut any seedheads and dispose of by burning or deep burial, apply glyphosate (100ml/10L knapsack) or metsulfuron-methyl 600 g/kg (5g/10L knapsack) ensuring entire plant is covered.
4. Granules (all year round): Cut seedheads and dispose of by burning or deep burial, apply Tordon 2G (2g/plant - a half level teaspoon) to the the crushed centre of each plant.
5. Grubbing or pulling ragwort is best done at full to late flowering stage, when the roots are less likely to regrow. Flower heads of pulled plants should be burned. Damaged plants (from cutting, digging, pugging, mowing or poor spraying) usually regrow, form large additional root crowns (multicrown) and become perennial, ie. flowering annually and not dying. These plants do not respond to 2,4-D herbicide, requiring tougher, more residual herbicides.

What can I do to stop it coming back?

Ragwort can be left in regenerating bush and shrubland (apart from obligations under Pest Management Strategies), as they will disappear as light levels fall. Longitarsus beetle gives good control but takes 2-5 years to attain sufficient numbers, so patience is required - check with your regional council for more information on this biological control agent.

