

weed warning



weeds of southern tasmania



A Guide to Environmental
and Agricultural Weeds
of Southern Tasmania



agricultural & environmental weeds

What are environmental weeds?

Environmental weeds are non-local plants that invade and change our landscapes, threatening the survival of native plants and animals.

What are agricultural weeds?

Agricultural weeds are also non-local plants that invade our productive areas, including grazing and cropping lands, orchards and berry farms, dairy farms and vineyards. The impact of weeds on agriculture is over \$60 million annually.

Where do they come from?


Weeds can come from all over the world. They can even be Australian native plants outside their natural range – these out-of-place natives can be just as devastating as foreign plants.

In the past 25 years, at least 65% of all plants that have become weeds in Australia were deliberately introduced as garden plants!

Weeds, spread by wind, birds or dumped garden waste, can take over natural and agricultural landscapes. Weeds can also be spread by boots, vehicles, contaminated soil, mud, gravel, agricultural produce, stock and feed.

What will happen if we don't do anything?

Tasmania is lucky to still have many areas of natural biodiversity that are worth protecting. If we do nothing, Tasmania's unique natural landscapes will be lost forever and agricultural land will become less productive. Every moment we ignore weeds, the further they spread.



Gorse has invaded the landscape across much of Southern Tasmania.

Why weeds are a growing problem

Agricultural and environmental weeds need to be controlled because they:

- **take over huge areas of natural coast and bushland** (broom, boneseed)
- **take over huge areas of agricultural land** (gorse, blackberries)
- **destroy animal habitat** (sea spurge)
- **impact on coastal processes** (marram grass)
- **change the shape & ecology of waterways** (willows)
- **hinder the regrowth of natives** (Spanish heath, gorse, boneseed)
- **restrict access** (blackberries, African boxthorn, gorse)
- **can be a danger to human health** (arum lilies, ivy)

Weeds of National Significance and Declared Weeds

Some weeds are so serious they are listed as Weeds of National Significance (WONS). Declared Weeds are those listed under the *Tasmanian Weed Management Act 1999*. Declared Weeds have a special legal status that requires landowners and managers to eradicate or control them.

Using this booklet

Weeds in this booklet are colour-coded by the following plant types:

GRASSES

LILLIES

HERBS

CREEPERS & CLIMBERS

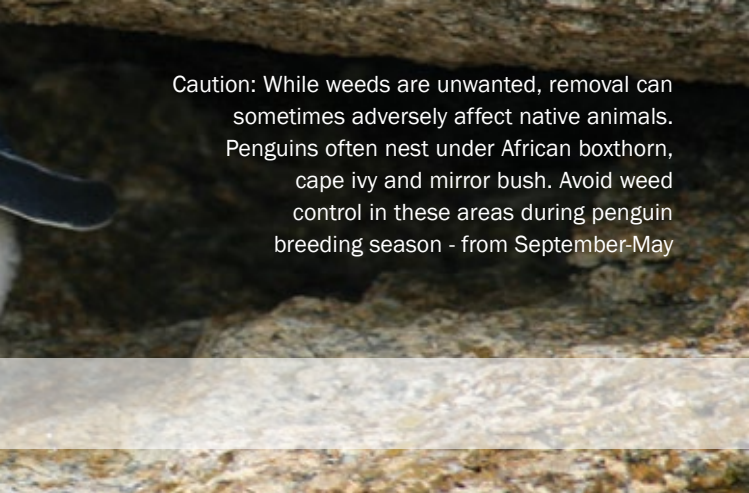
SHRUBS & TREES



get involved

Tips on weed removal

- **Check it is a weed and not a native.** Get expert advice to make sure you are not removing a native by mistake.
- **Make sure removal is the best option.** Some areas with weeds such as beaches, dunes, rivers and creeks may be best left alone. These areas are prone to erosion, can be important animal habitats, and may contain Aboriginal heritage sites. Contact your local weeds officer (local council or DPIPWE) for advice.
- **Get permission before removing weeds on bushland or coastal reserves or land you do not own.** Check with landowners first; farmers, local council, Parks and Wildlife Service or Crown Land Services.
- **Plan your weed removal.** Gradual removal ensures native habitat is not lost (and allows native fauna species to adapt), new bare areas are not created for more weeds to colonise and erosion is avoided. Plan weed removal and revegetation simultaneously. In agricultural situations replant with desired species.
- **Minimise disturbance.** Remove isolated weeds in areas of good bush and agricultural land before tackling a dense infestation:
 1. Hand-pull seedlings from moist soil or after rain.
 2. Fill in holes with soil and pack down firmly.
 3. Cut and paint stems rather than pulling out large plants.
 4. Don't pull or rip down climbers from trees as damage can occur to native or non-invasive species.
- **Replace with natives.** Check that your local nursery you are dealing with stocks native plants that have been propagated from locally collected seed.



Caution: While weeds are unwanted, removal can sometimes adversely affect native animals. Penguins often nest under African boxthorn, cape ivy and mirror bush. Avoid weed control in these areas during penguin breeding season - from September-May

Recommended Weed Control Methods

Plan

Identify weed and native species. Identify the best control method for each weed species and treat accordingly.

Hand-pull or Dig-out

Hand-pulling is a relatively gentle control method for seedlings, herbs and grasses. Some larger plants such as boneseed may also be pulled out quite easily. It is easier to remove all the roots from moist soil.

Dig out plants with tougher root systems: insert a long knife or narrow trowel into the soil outside the root system. Gently loosen the soil, work around the roots and then work the plant out gently. You may need to also remove corms, bulbs or tubers.

Plants without seed that will not resprout can be left on-site to rot. Otherwise, bag weeds, take to your local waste transfer station and remember to cover your load.

Mechanical Removal

Mechanical removal can reduce the volume you need to treat, and may provide easier access. If using chainsaws, brushcutters or slashers be sure to minimise soil disturbance and clean machinery well afterwards. Always consider native plant and animal habitat, and seek advice first.

Biological Control

Find out if any biological control options are available in your area before using chemicals. If biological controls are used, there still needs to be management of seed stock during the biocontrol process.

Chemical Control

Get professional advice and follow herbicide instructions. By law, herbicide control may only be undertaken using chemicals registered for specific weeds and situations. If spraying near waterways, check that the appropriate chemical is used. In pastures, use selective herbicide that does not kill grass, whenever possible.

Cut and Paint

This is the best technique for large or woody weeds. Cut all stems as close to the ground as possible. A horizontal cut prevents runoff of poison. Apply herbicide to cut stems within 20 seconds. For creepers, climbers and some other woody plants it is possible to scrape the woody stem and paint with herbicide.

Cut and Fill and Frilling

Contact DPIPW on 1300 368 550 for advice.

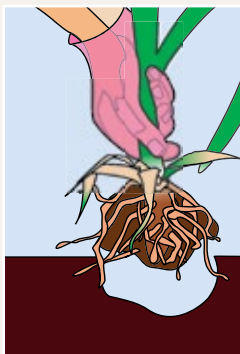
Safety first!

Always wear protective clothing: Long pants and sleeves, boots, gloves, mask and eye protection – especially when handling toxic weeds or using chemicals. Ensure you have the correct certification and training where applicable. Check this guide for toxic plants, marked with this “toxic” symbol.



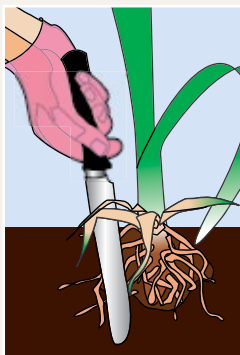
Hand-pull

Hold at the base of the plant.



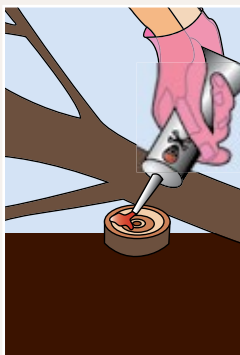
Dig Out

Make sure you get all the roots.



Cut and Paint

Take all safety precautions and wear protective clothing.



Responsible Disposal of Weeds

Correct disposal of weeds, or contaminated soil containing weed can be difficult. Some weeds (such as Declared weeds) have transport restrictions and will need to be dealt with on your property. Local green waste disposal sites are not able to accept Declared weeds. It is best to discuss disposal options with a weed officer first. Most councils have a weed officer or you can contact DPIPWWE weed officers for advice. If you do need to dispose of weeds, following the guidelines below will help to minimise the spread.

- Research your weed, find out what species is it, when it flowers, the best time to control it and the best control methods.
- Avoid undertaking control when plants are in seed, this will reduce the risk of spreading the seed.
- Dispose of the weed correctly. This may include burning on site, composting, double bagging seed heads and possibly deep burial on site or at a waste disposal station.
- Monitor the disposal area and the area controlled. Weeds can take many years to eradicate, but with annual monitoring and control this task will get easier every year.

Follow up

Follow up is essential until the seedbank is exhausted (an average of seven years). For some species, such as gorse, this can be more than 25 years.

Pasture Management

To limit weed germination, maintain ground cover with grasses and clover. Do not overgraze.

Control Methods

All Declared weeds in Tasmania have a control guide prepared by DPIPWWE. These are available online.

A limited number of non-Declared weeds also have control guides. These species are highlighted throughout this guide.

Alternative Plants

If you are removing weeds from bushland, it is generally best to leave the bush to regenerate naturally.

If you plan to remove plants from your garden consult the NRM South Native Plant Species List (available from the NRM South website or from your local council) for a list of suitable native plants.

For advice about native plants contact:

The Understorey Network

www.understorey-network.com.au

The Australian Plant Society Australia (Tasmania)

www.apstas.com

Visit your local nursery or ask one of the above organisations for details of nurseries specialising in Tasmanian native plants.

Further Information

This booklet has been developed as a guide for identification and control of significant weeds in Southern Tasmania. If you are uncertain about weed identification or the most appropriate control method, seek advice from your local council or from DPIPWE.

There are a range of biosecurity resources on the NRM South website and the Washdown Guidelines for Weed and Disease Control can also be found on the DPIPWE website.

NRM South:

www.nrmsouth.org.au/biosecurity/

DPIPWE:

dPIPWE.tas.gov.au

Definitions:

Declared Weed: Declared Weeds are listed under the Tasmanian Weed Management Act 1999. Declared Weeds have a special legal status that requires landowners and managers to eradicate or control them. See the DPIPWE website for a full list.

WONS: Weeds of National Significance are priority weeds that are considered to have a serious potential to negatively affect landscapes based on their invasiveness, potential for spread and environmental, social and economic impacts. WONS require coordination among all levels of government, organisations and individuals with weed management responsibilities.



African boxthorn

Lycium ferocissimum

WONS
DECLARED

Native to Southern Africa

Description: Thorny, many-branched shrub growing to 5m.

Flowers: Mainly spring-summer – purplish-white, fragrant flowers.

Fruits/Seeds: Summer/autumn – bright orange-red fleshy berries with <70 dull yellow seeds.

Dispersal: Birds and animals, gravel, produce, garden waste. Suckers from root fragments if disturbed.

Control: May be important penguin habitat in coastal areas – check with PWS. Dig out small plants in moist soil or cut and paint. If penguin habitat, dead plants should be left in situ, and/or artificial burrows provided. Otherwise burn waste to facilitate follow-up.



African feathergrass

Pennisetum macrourum

DECLARED

Native to South Africa

Description: Upright tussock-forming grass to 2m. Stems cylindrical, hairless, leaves light green. Sturdy rhizomes and fibrous root mass.

Flowers: Late spring-summer – flower-heads pale brown to straw coloured, often with purplish tinge, in feathery spikes.

Fruit/Seeds: Seeds yellow-brown, 5-7mm long, drop in summer-autumn.

Dispersal: Mostly by rhizomes, but also long lived seeds in water or contaminated soil.

Control: Cultivation, pasture improvement and/or herbicides.

LIMITED DISTRIBUTION – REPORT TO DPIPWE IF FOUND.



African lovegrass

DECLARED

Eragrostis curvula

Native to South Africa

Description: Greyish-green tufted grass to 1.2m, leaf blades rough, tips often bleached or curved.

Flowers: Spring-summer – inflorescence branching, flowers in greenish-purple to greyish spikelets to 1cm long.

Fruit/Seeds: Seeds tiny, oval to round, maturing late summer-autumn.

Dispersal: Seeds spread by water. Also easily spread on clothing, machinery, in produce or soil or by livestock – can survive ingestion.

Control: Dig out smaller plants. Spot spray larger infestations.

LIMITED DISTRIBUTION – REPORT TO DPIPWE IF FOUND.



Agapanthus

Agapanthus praecox ssp. orientalis



Native to Southern Africa

Description: Hardy lily with thick, glossy, strap-like leaves to 50cm.

Flowers: During summer – blue or white in large heads on thick stem approximately 1.2m tall.

Fruit/Seeds: Three-sided capsule with many small, shiny black seeds.

Dispersal: Spread by rhizomes. Also seed and fragments in water, garden waste and soil.

Control: Dispose of flower-heads before they set seed. Dig out clumps and all roots.



Amsinckia

Amsinckia spp.

DECLARED

Native to North and South America

Description: Annual herb mostly 20-70cm tall.

Flowers: Distinctive coiled green clusters with yellow-orange trumpet-shaped flowers up to 6mm unfurling in fiddle-heads.

Fruit/Seeds: Burrs holding four seeds each, with hundreds of seeds per plant.

Dispersal: Burrs hook onto animals and clothing. Also easily spread on dirty machinery, in produce or soil.

Control: Mechanical removal, cultivation, grazing and/or herbicides.



Arum lily

Zantedeschia aethiopica



Native to Southern Africa

Description: Large plant with thick, arrow-head shaped leaves.

Flowers: Mainly August-February – false flower is a large, white funnel containing the true flowers on a yellow rod.

Fruit/Seeds: Green-yellow-orange berry 5-10mm with four yellow-brown seeds.

Dispersal: By rhizomes and seed spread by water, birds, animals, machinery, dumped garden waste and soil.

Control: Dig out, bag and dispose of bulbs and roots.
Spot spray.

ALL PARTS OF ARUM LILY ARE VERY POISONOUS.



Asparagus fern

Asparagus scandens

WONS
DECLARED

Native to Southern Africa

Description: Forms dense mats. Narrow leaves to 15mm long in threes at intervals along stem.

Flowers: August-October – small, white-pinkish flowers with six petals.

Fruit/Seeds: Round, orange-red berry with one shiny black seed.

Dispersal: Spreads from tuber. Seed spread by birds and animals, dumped garden waste and soil.

Control: Contact DPIPWE for advice.



Banana passionfruit

Passiflora tarminiana

Native to South America

Description: Vigorous climber to 20m long. Large leaves with three lobes and serrated edges.

Flowers: January-March – large, pink, hanging from long fleshy stalks.

Fruit/Seeds: Green, oblong, fleshy fruit, turning yellow when ripe, containing 50-200 black seeds in a sweet pulp.

Dispersal: spread by seed internally (by birds, animals, humans), dumped garden waste and soil.

Control: Bag and remove fruit, dig out, cut and paint or stem-scrape larger infestations (treat all stems). The ripe fruit can be eaten.



Blackberry

Rubus fruticosus aggregate

WONS
DECLARED

Native to Europe

Description: Scrambling plant with hooked prickles, forming dense thickets.

Flowers: November-February – white/pink flowers with five petals, forming in clusters.

Fruit/Seeds: Dark purplish fruits with up to 80 segments from late summer-autumn.

Dispersal: Fruits eaten and dispersed by animals and birds.

Control: Dig out small plants and remove all roots and stems. Cut and paint scraped stems. Use herbicide, fire or grazing for large infestations.

CAUTION – it is illegal to spray fruiting plants.



Blue butterfly-bush

Psoralea pinnata

Native to Southern Africa

Description: Erect shrub or small tree to 5m with groups of three needle-like leaflets.

Flowers: Spring/summer – white/lilac-blue 'pea-flowers'.

Fruit/Seeds: Elliptical pods 3-4mm long with one dark brown seed.

Dispersal: Seed spread by water, garden waste, contaminated soil and birds.

Control: Hand-pull small plants. Cut and paint large plants.



Blue periwinkle

Vinca major



Native to Mediterranean region

Description: Ground-cover with dark or variegated, shiny oval leaves.

Flowers: During spring – flat, mauve, 6cm across with five petals.

Fruit/Seeds: Rarely sets viable seed.

Dispersal: Stem fragments will root in contact with the ground. Water, wind, garden waste and soil.

Control: Cover with mulch, black plastic or old carpet for six months to reduce vigour, then dig out, or cut-back and spray regrowth repeatedly. Bag and dispose through deep burial at tip.

POISONOUS TO SHEEP, CATTLE AND HORSES.



Bluebell creeper

Sollya heterophylla



Native to Western Australia

Description: Twisting and arching climber to 3m, with narrow, shiny leaves. Found in dry forest, especially in Kingborough and Clarence municipalities.

Flowers: Spring – small clusters of bright blue, bell-shaped flowers.

Fruit/Seeds: Green cylindrical fruit turning black in summer/autumn.

Dispersal: Seeds spread by birds. Also stem and root fragments.

Control: Hand-pull seedlings. Cut off and paint, bag and dispose of stem and root material.



Boneseed

Chrysanthemoides monilifera

WONS
DECLARED

Native to Southern Africa

Description: Shrub to 3m with fleshy, oval leaves.

Forms dense infestations.

Flowers: Yellow daisy-flowers from winter to summer.

Fruit/Seeds: Green berries turn purple-black, with one seed.

Dispersal: Birds, animals and water. Regenerates prolifically after fire from soil-stored seed.

Control: Hand-pull small plants in moist soil or cut and paint larger plants. Bag and dispose of fruit responsibly.



Bridal creeper

Asparagus asparagoides

WONS
DECLARED

Native to Southern Africa

Description: Smothering climber with thin, zig-zagging stems and shiny leaves with parallel veins.

Flowers: Spring – solitary, greenish-white with six petals.

Fruit/Seeds: Numerous green, pea-sized berries turning pink-dark red in November, each with 1–9 black seeds.

Dispersal: Seeds spread by birds, rabbits, water, garden waste and soil. May spread by rhizome/tuber.

Control: Contact DPIPWE for advice.

**LIMITED DISTRIBUTION IN SOUTHERN TASMANIA –
REPORT TO DPIPWE IF FOUND.**



Californian thistle

DECLARED

Cirsium arvense

Native to Europe, Asia and North Africa

Description: Perennial prickly herb to 1.5m tall, leaves with irregular spiny edges. Extensive rhizomatous (creeping) root system. Dies down in winter and resprouts in spring.

Flowers: In groups of 1-5 at stem tips, up to 2.5cm long and wide. Flower-heads pinkish-purple.

Fruit/Seeds: Seeds small and brown attached to white pappus (feathery structure).

Dispersal: Via root system – also in root fragments in soil on machinery. A little by seed (if male and female plants are located together).

Control: Contact DPIPWE for advice.



Canary/Montpellier broom

WONS
DECLARED

Genista monspessulana

Native to Europe

Description: Dense, upright shrubs to 3m with oval leaflets in threes.

Flowers: Late winter-spring – groups of five bright yellow pea-flowers at ends of stems.

Fruit/Seeds: Silky seed pods with up to eight black seeds.

Dispersal: Water, contaminated machinery, dumped garden waste and soil.

Control: Dig out small plants in moist soil or cut and paint.



Capeweed

Arctotheca calendula

Native to Southern Africa

Description: Usually a flat rosette but may be more upright. Deeply dissected leaves. Abundant in overgrazed paddocks

Flowers: Spring – yellow daisy-flowers with black centres.

Fruit/Seeds: Seeds produced in summer.

Dispersal: Wind, mowing and dumped garden waste and soil.

Control: Refer to DPIPWE website for control guide.



Cape ivy

Delairea odorata



Native to Southern Africa

Description: Dense ground cover and climber with ivy-shaped leaves and stems to 10m. Largely coastal distribution.

Flowers: Spring – masses of fragrant yellow, seemingly ‘petal-less’ daisy-flowers.

Fruit/Seeds: Pale brown seeds with a crown of silky white hairs.

Dispersal: Wind, birds and dumped garden waste/soil. Also spreads from rooting stem fragments.

Control: Cut off stems and leave draped over native vegetation to die. Dig out and remove all roots and stems in contact with the soil. Spray regrowth.



Cape wattle

Paraserianthes lophantha

Native to Western Australia

Description: Spreading tall shrub or small tree with dark-green, feathery leaves.

Flowers: May-September – greenish-yellow bottlebrush-like heads.

Fruit/Seeds: Long, flat green pods turning brown in summer, with 6-12 hard, black long-lived seeds.

Dispersal: Seeds spread by water, wind, ants, dumped garden waste and soil. Planting of this species is incorrectly recommended by some permaculture advocates.

Control: Hand-pull (even large specimens) or cut and paint.



Chilean needlegrass

Nassella neesiana

Native to South America

Description: Tussock grass to 1.5m when seeding, leaves strongly ribbed with fine hairs.

Flowers: Mostly spring-summer – many flowers held on branching stalks taller than leaves.

Fruit/Seeds: Seeds on branches have a sharp point and long bent awns. Seeds also form within stems and at leaf bases.

Dispersal: Seeds attach to animals, clothing, also easily spread on dirty machinery, in produce or soil.

Control: Do not control – contact DPIPWE for advice.

VERY LIMITED DISTRIBUTION – REPORT TO DPIPWE IF FOUND.

WONS
DECLARED



Climbing groundsel

Senecio angulatus

Native to Southern Africa

Description: Climber or large, spreading shrub. Often confused with Cape ivy but has thicker, diamond-shaped leaves.

Flowers: Many yellow daisy-flowers with larger 'petals' than Cape ivy.

Fruit/Seeds: Pale brown seeds to 2.5mm with a tuft of hairs.

Dispersal: Seeds and stem fragments spread by wind, dumped garden waste and soil.

Control: Cut off stems and leave draped over native vegetation to die. Dig out and remove all roots and stems in contact with the soil.



Cotoneaster

Cotoneaster spp.

Native to East Asia

Description: Small tree to 5m with many stems and green-red oval leaves.

Flowers: Spring-summer – small and white in large clusters.

Fruit/Seeds: February-August – heavy clusters of red 'berries' each with two seeds.

Dispersal: Birds, dumped garden waste. Will sucker from base if cut down.

Control: Hand-pull small plants. Cut and paint.



Crow garlic

Allium vineale

Native to the Mediterranean

Description: May be either vegetative (with 2-3 leaves) or flowering with up to six hollow cylindrical leaves to 60 cm.

Flowers: Spring - summer, pink or greenish bell shaped in inflorescences up to 1m tall.

Fruit/Seeds: Rarely sets seed in Tasmania.

Dispersal: Via germination of bulbs. Bulbs can be spread via cultivation, movement of topsoil, on equipment or stock movement.

Control: In crop situations, control via spring-sown cereal cropping. Spot spray where it occurs in native habitat. Bulbs can remain dormant for up to six years, bag and dispose of all bulbs.



Cumbungi/Bullrush

Typha latifolia

Native to Eurasia and North America

Description: Rigid reed to 3m with flat leaves and thick, round stem.

Flowers: During summer – minute, densely packed in a velvety, black-brown brush.

Fruits/Seeds: Tiny nutlet with minute seeds.

Dispersal: Spread by rhizomes. Also seed in wind and water.

Control: Cut stems >15cm below water level in spring. Hand-pull and remove all the rhizome. Seek professional advice as *T. latifolia* and native *T. orientalis* are hard to distinguish. DPIPWE control guide available.



Cutleaf nightshade

Solanum triflorum



Native to North and South America

Description: Low or sprawling herb to 1m, green alternate leaves with deeply lobed segments and pointed tips.

Flowers: Late spring-summer – small with white petals, in clusters of 1-3 on stems.

Fruit/Seeds: Round, 8-12 mm across, green or greenish-white streaked fruit with pale yellow seeds.

Dispersal: Seeds spread as contaminants of legume or vegetable seed, in contaminated sand, or by animals.

Control: Individual plants can be dug out. Ensure fruit is bagged for deep burial, or burned.

LIMITED DISTRIBUTION – REPORT TO DPIPWE IF FOUND.



Darwin's barberry

Berberis darwinii

DECLARED

Native to Southern South America (Chile, Argentina)

Description: Spiny evergreen shrub generally 1-2m tall, with holly-like leaves.

Flowers: In clusters up to 5cm long of 8-20 narrow, cup shaped flowers. Each flower up to 5mm long, with nine yellow petals.

Fruit/Seeds: Dark purple/nearly black berries 6-9mm long, with pale waxy bloom, each containing two seeds.

Dispersal: Thought to be eaten and spread by birds.

Control: Hand pull small plants. Cut and paint larger plants.



Datura

Datura species



Native to China, Europe and Asia

Description: Stout upright annual or short-lived perennial herbs to 1.5m with alternate leaves.

Flowers: Summer-autumn – erect trumpet-shaped flowers with pointed lobes, generally white.

Fruit/Seeds: Fruit a distinctive spiny capsule, opens by valves, summer-autumn.

Dispersal: Contaminated crop seed, in water, or on dirty equipment and machinery.

Control: Hand pull or dig out smaller plants. Bag seed capsules. Contact DPIPWE for larger infestations.



Elisha's tears

Leycesteria formosa

DECLARED

Native to the Himalayas

Description: Hollow-stemmed deciduous shrub to 4m, found in wet forest and riparian areas.

Flowers: November-February – drooping bunches of white-purple funnel-shaped flowers in purple floral leaves.

Fruit/Seeds: Broadbean-sized, dark purple berries with around 100 seeds.

Dispersal: Seeds spread by birds, water and dumped waste/soil. Also root fragments and suckers.

Control: Dig out or cut and paint before berries form. Spray dense infestations.



English broom

DECLARED

Cytisus scoparius

Native to Europe

Description: Deciduous, erect shrub with twiggy, five-angled stems and small dark green leaves, though leafless through most of the year.

Flowers: Spring-summer – masses of bright yellow pea-flowers.

Fruit/Seeds: January-March – green to black seed pods with 5-22 yellow/brown seeds.

Dispersal: Exploding pods, ants, vehicles, animals, footwear, water, dumped garden waste and soil.

Control: Hand-pull small plants, remove all roots. Cut and paint with woody weed herbicide.



English ivy

Hedera helix



Native to Europe

Description: Dense, woody climber with tough, dark, glossy green lobed or egg-shaped leaves.

Flowers: March-July – inconspicuous, greenish flowers in clusters.

Fruit/Seeds: Summer – small, blue-black berries in spherical heads with 2-5 whitish seeds.

Dispersal: Seeds and rooting stem fragments. Spread by birds and garden waste.

Control: Hand-pull or dig out, bag and dispose of. Cut and paint larger plants (cut all stem-roots).

ALL PARTS OF IVY ARE POISONOUS.



Feathertop

DECLARED

Pennisetum villosum

Native to North Africa

Description: Perennial tussock grass to 70cm with underground stems (rhizomes).

Flowers: Spring-summer – inflorescence a fluffy-looking, plume-like spike to 12cm with numerous long, soft pale-green to white bristles.

Fruit/Seeds: Seeds yellow-brown, oblong 3mm long and 1-1.5mm wide, maturing in autumn.

Dispersal: Seeds spread by water. Also easily spread on clothing, machinery, in produce or soil.

Control: Dig out smaller plants. Spot spray larger infestations.

LIMITED DISTRIBUTION – REPORT TO DPIPWE IF FOUND.



Fennel

DECLARED

Foeniculum vulgare

Native to Europe and Western Asia

Description: Feathery, highly-divided leaved herb to 2.5m. Aniseed scented. Usually found along road and rail verges and in unmanaged urban areas.

Flowers: Summer-autumn – tiny and yellow on star-shaped heads.

Fruit/Seeds: Numerous, long and thin, around 5x1mm.

Dispersal: Seeds spread on animals, in water, vehicles and garden waste.

Control: Dig out small plants – ensure all of tap-root is removed. Cut and paint close to ground.



Firethorns

Pyracantha spp.

Native to South West China

Description: Spiny shrubs/small trees 1-5m tall, with alternate leaves, often planted in gardens or along highways.

Flowers: White flowers in branched clusters.

Fruit/Seeds: Fruits resemble tiny yellow/orange/red apples.

Dispersal: Fruit dispersed by birds and other animals. Also in water and in dumped garden cuttings.

Control: Hand-pull or dig out smaller plants. Cut and paint larger trees.



Foxglove

Digitalis purpurea



Native to Europe

Description: Upright herb with soft, densely haired, toothed leaves 15-25cm long.

Flowers: Spring-summer – tall spike of bell-shaped pink, white or yellow flowers with mottled patterns in throats.

Fruit/Seeds: Prolific tiny black seeds produced in summer, germinating autumn/winter. Seed longevity is decades.

Dispersal: Seeds spread on water, wind, animals, dumped garden waste, in contaminated soil and dirty machinery.

Control: Hand-pull plants when soil is moist or spot spray. Minimise soil disturbance as this stimulates germination.

POISONOUS IF EATEN.



Fuchsia

Fuchsia magellanica

Native to Chile

Description: Dense or sprawling, multi-stemmed shrub. Primarily a problem of creeklines or moist environments.

Flowers: Spring to summer – deep red or pink, drooping and lantern-shaped.

Fruit/Seeds: Pale or translucent, cylindrical-shaped fruit in summer/autumn.

Dispersal: Mainly by seeds from birds and water. Also spread by broken stems.

Control: Dig out or cut and paint. Seek advice on large infestations or infestations on riverbanks. Bag and dispose.



Gazania

Gazania spp.

Native to Southern Africa

Description: Herb to 30cm with long, narrow leaves, green on the upper surface and whitish below.

Flowers: Spring-autumn – petals typically bright yellow-orange, black in the centre.

Fruit/Seeds: Seeds produced in summer and autumn.

Dispersal: Wind, water and dumped garden waste.

Control: Hand-pull, mattock or herbicides.



Gorse

Ulex europaeus

WONS
DECLARED

Native to Western Europe

Description: Dense, spiny shrub with grooved stems and spines.

Flowers: July-October – golden, fragrant pea-flowers in bunches.

Fruit/Seeds: Dark brown hairy pods with up to six shiny, green-brown seeds.

Dispersal: Exploding pods, ants, vehicles, gravel, animals, footwear, water, dumped garden waste and soil.

Control: Dig out small plants. Cut and paint. Foliar spray large infestations with a woody weed herbicide.



Hawthorn

Crataegus monogyna

Native to Europe

Description: Deciduous, thorny shrub to 10m with small, lobed leaves. A common hedge plant.

Flowers: October-December – fragrant, white/pink in dense clusters.

Fruit/Seeds: Red berries with yellow flesh and one hard seed in summer.

Dispersal: Seeds spread by birds, animals, machinery, garden waste and mud. Also suckers.

Control: Hand-pull or dig out small plants in moist soil or cut and paint. Treat all stems.



Heather

Calluna vulgaris

DECLARED

Native to Europe, Asia and North Africa

Description: Evergreen shrub to 70cm, small dark green leaves, fine hairs on stems.

Flowers: Any time of year – purplish-pink to white bell shaped flowers with four petals.

Fruit/Seeds: Each plant produces thousands of tiny reddish-brown seeds. Seeds remain viable for decades and require heat for germination - avoid burning.

Dispersal: Tiny seeds easily spread in water, contaminated soil and on dirty clothing, machinery and equipment.

Control: Refer to DPIPWE control guide.

LIMITED DISTRIBUTION – REPORT TO DPIPWE IF FOUND.



Holly

Ilex aquifolium



DECLARED

Native to Europe

Description: Many-branched, conical shrub/small tree to 15m with some leaves wavy and with sharp spines.

Flowers: Small, white-pinkish, fragrant flowers in threes.

Fruit/Seeds: Bright red berries in autumn, with 4-5 white, hard seeds.

Dispersal: Seed (male and female plants required), spread by birds and animals. May sucker.

Control: Dig out small plants. Cut and paint.



Horehound

DECLARED

Marrubium vulgare

Native to Europe, Asia and North Africa

Description: Semi-woody, mint-like herb to 60cm. Stems densely covered in white hairs, leaves opposite.

Flowers: Densely clustered at leaf bases, each flower white, tubular 6-12mm long, surrounded by hooked spines.

Fruit/Seeds: Fruit surrounded by spiny burr-like structure, each containing up to four spear-shaped seeds.

Dispersal: Burrs stick to sheep or other animals. Also spread on dirty machinery or in soil.

Control: Manual removal, ploughing and/or herbicides (use a selective woody weed herbicide in pastures).



Horsetail

DECLARED

Equisetum spp.

Native to Europe, Asia, North America

Description: Aggressive weed of moist areas, with vigorous underground stems (rhizomes) that grow hollow, finely-ribbed, tightly packed shoots.

Flowers: Non-flowering – produces millions of spores in fruiting cones on fertile fronds in spring.

Fruit/Seeds: Spores microscopic, poisonous to some animals.

Dispersal: Spores spread by wind and water, and in contaminated soil.

Control: Do not control – contact DPIPWE for advice.

VERY LIMITED DISTRIBUTION – REPORT TO DPIPWE IF FOUND.



Japanese honeysuckle

Lonicera japonica

Native to China and Japan

Description: Fast-growing, twining, woody climber.

Flowers: Summer-autumn – white or yellow, thin, tubular and strongly scented.

Fruit/Seeds: Shiny black 6-10mm berry with 2mm seeds.

Dispersal: Mainly by stolons and rooting stems. Seeds spread by birds, water, garden waste and soil.

Control: Dig out (remove as much root as possible) or cut back to crowns and spray regrowth.



Karamu

DECLARED

Coprosma robusta

Native to New Zealand

Description: Large shrub/small tree to 6m with oval leaves with pointed tip. Primarily found in riparian areas.

Flowers: Separate male and female flowers – small, greenish, in clusters at leaf bases.

Fruit/Seeds: Orange/red fruits fleshy outside and hard inside – oval, 8-9mm long and 4-5mm wide.

Dispersal: Seeds spread in water, eaten and spread by birds and possibly other animals.

Control: Bag and remove fruit. Hand pull or dig out small plants. Cut and paint larger infestations.

LIMITED DISTRIBUTION – REPORT TO DPIPWE IF FOUND.



Mallow

Malva spp.

Native to Europe, West Asia and North Africa

Description: Hairy-leaved herbs, leaves alternate and usually roundish.

Flowers: Mostly spring-summer – five petals varying from white to pinkish-purple with notched ends.

Fruit/Seeds: Fruits dry, disc-shaped, splitting into segments at maturity.

Dispersal: Seeds spread in contaminated soil, on dirty equipment and in dumped garden waste.

Control: Hand pull or dig out smaller plants, cut and paint large infestations.

NOTE: THERE ARE NATIVE MALVA SPECIES IN COASTAL AREAS, VERIFY SPECIES PRIOR TO CONTROL.



Marram grass

Ammophila arenaria

Native to Western Europe coasts

Description: Tall, dense, sand-binding grass to 1.2m

Flowers: During spring and summer – in a dense, pale green to straw coloured cylindrical brush.

Fruit/Seeds: Seed often sterile.

Dispersal: Mostly by rhizomes, wind, water, on animals or in contaminated sand. Was previously planted to stabilise dunes.

Control: Contact PWS or DPIPWE.



Mediterranean daisy

Urospermum dalechampii

DECLARED

Native to Europe and West Asia

Description: Daisy growing to 50cm with basal leaf rosette and milky sap. Prefers grassy woodlands and grasslands.

Flowers: Spring – flower-heads in ones or twos, to 6cm in diameter, lemon to sulphur yellow, sometimes with red streaks underneath.

Fruit/Seeds: Small black seeds with pappus (tuft of feathery bristles) forming late spring to summer.

Dispersal: Seeds spread on wind and in contaminated soil. Plants can also shoot from lateral roots.

Control: Hand pull or dig out smaller plants. Spot spray larger plants.



Milkwort

Polygala myrtifolia

Native to Southern Africa

Description: Erect or spreading shrub to 3m with oval leaves. New stems purplish and slightly hairy. Coastal/subcoastal distribution.

Flowers: Mostly August-December but can be year-round clusters of purple pea like flowers.

Fruit/Seeds: Flattened pod with two seeds in autumn.

Dispersal: Ants, water, birds and contaminated soil.

Control: Hand-pull or dig out. Cut and paint larger shrubs at base.



Mirror bush

Coprosma repens

Native to New Zealand

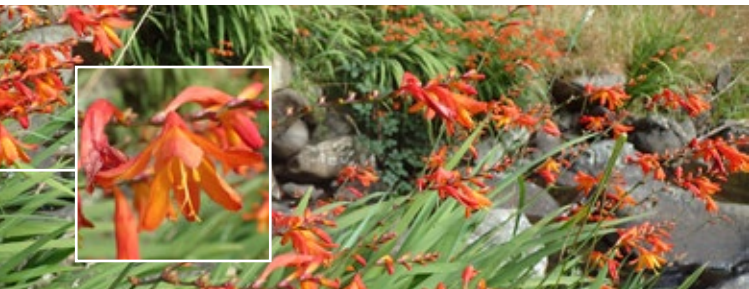
Description: Shrub to 8m with glossy green, roundish leaves. Coastal/subcoastal distribution.

Flowers: Summer – inconspicuous. Male are in dense greenish clusters, female are tubular and whitish in threes.

Fruit/Seeds: Fleshy orange berries in dense clusters each with 1-2 seeds in summer-autumn.

Dispersal: Birds and animals and dumped garden waste.

Control: Hand-pull or cut and paint.



Montbretia

Crococsmia x crocosmiiflora

Native to Southern Africa

Description: Lily with flat, soft leaves to 90cm.

Flowers: Fine, trumpet-shaped orange flowers in an open arrangement.

Fruit/Seeds: Three-lobed shrivelled capsules, seeds not usually produced.

Dispersal: By rhizomes and corms in water, garden waste and contaminated soil and on machinery.

Control: Dig deeply in moist soil to remove all corms or spray/wipe plants in spring. Bag and dispose of material.



New Zealand flax

Phormium tenax

Native to New Zealand

Description: Clump-forming, strap-like leaves in shades of green, bronze and maroon to 2m tall and wide.

Flowers: Orange-red, upright in sprays on a tall stalk above the leaves.

Fruit/Seeds: Woody, bean-like capsule held upright with glossy-black, flat, 1cm winged seeds.

Dispersal: Rhizomes, seeds spread by wind, water, dumped garden waste and soil.

Control: Hand-pull or dig out. Remove all roots. For large clumps cut off foliage at the base and spray.



Orange hawkweed

Hieracium auranticum

DECLARED

Native to Europe

Description: Hairy-leaved daisy with milky sap, leaves at base in rosettes.

Flowers: Late summer – bright reddish-orange flower-heads 1.5-3cm across.

Fruit/Seeds: Many dandelion-type seeds with white pappus (feathery structure) in summer-autumn.

Dispersal: Spreads by runners and wind-borne seeds.

Control: Spot-spray or dig out and remove all roots.

VERY LIMITED DISTRIBUTION – REPORT TO DPIPWE IF FOUND.



Ox-eye daisy

Leucanthemum vulgare

Native to Europe and Asia

Description: To 1m with basal leaves spoon-shaped with rounded teeth and marginal lobes, stem leaves oblong and toothed-lobed. Most common on road verges and in undergrazed pastures.

Flowers: Spring-autumn – white daisy-flowers with yellow centres.

Fruit/Seeds: Ribbed seeds in summer.

Dispersal: Stem fragments and seeds in dumped garden waste and contaminated soil.

Control: Hand-pull, dig out or spot spray. In pastures, use a selective herbicide.



Pampas grass

DECLARED

Cortaderia spp.

Native to South America and New Zealand

Description: Tall grass to 6m with rasping leaves.

Flowers: Three different species have large, silky flowers appearing in late summer (pink), autumn (yellow), and spring (white). Unlike native cutting grasses flower-heads don't turn dark brown.

Fruits/Seeds: Prolific seeds from winter-spring.

Dispersal: Wind, water, machinery, dumped garden waste (rhizomes, seeds and crowns), gravel and contaminated soil.

Control: Spot-spray small plants. Slash, burn or dig out larger plants and spray regrowth.



Paterson's curse

Echium plantagineum



DECLARED

Native to Western Europe and Mediterranean

Description: Annual herb 30-60cm tall (may reach 2m), leaves light-to mid-green, stalked, covered in bristly hairs.

Flowers: Late winter-early spring – flowers trumpet shaped, blue-purple, 2-3 cm long.

Fruit/Seeds: Seeds in nutlets, rough-coated – helping dispersal.

Dispersal: On coats of animals. Also in contaminated produce and soil, machinery and clothes.

Control: Hand-pull small plants. Spot-spray larger plants.

POISONOUS TO LIVESTOCK. Similar to Vipers Bugloss (*Echium vulgare*)



Pride of Madeira

Echium candicans

Native to Madeira Islands, Portugal

Description: Thick-stemmed, soft-wooded shrub 1-2m tall. Leaves to 25cm long, stems covered with fine, bristly hairs.

Flowers: Spring-early summer – blue to violet spikes.

Fruit/Seeds: Four-segmented fruits which split into nutlets when ripe

Dispersal: Often deliberately planted in gardens. Spreads largely by seed on clothing or equipment, in contaminated soil, or in dumped garden waste.

Control: Hand pull or dig out smaller plants; cut and paint large infestations.



Radiata pine

Pinus radiata

Native to North America

Description: Conical pine-tree to 50m with whorled branches. Aromatic.

Flowers: None.

Fruit/Seeds: Large green female pine-cones, turning brown and releasing seed with two papery wings.

Dispersal: Wind, water and birds.

Control: Hand-pull seedlings. Cut off trees at the base, painting with herbicide not necessary.



Ragwort (yellow)

Senecio jacobaea



DECLARED

Native to Europe

Description: Erect herb to 1.5m, has deeply dissected leaves with wavy, rounded lobes.

Flowers: December-March – large heads of bright yellow daisy-flowers with 10-15 petals.

Fruit/Seeds: Hundreds of seeds in late summer-autumn.

Dispersal: seed spread by wind, water, animals, machinery, contaminated hay; also rhizomes and roots.

Control: Hand-pull or dig out. Remove all larger roots. Selective grazing, pasture management and/or herbicide.

POISONOUS TO LIVESTOCK - BOTH FRESH AND DRIED.



Red valerian

Centranthus ruber

Native to Western Europe and the Mediterranean

Description: Upright or sprawling herb to 80cm with narrow to broadly ovate, blue-green leaves. Uppermost leaves may be toothed. Most common on road and rail verges.

Flowers: Tiny red or white flowers in conical spikes.

Fruit/Seeds: Dry, oval fruit with a ring of hairs and one seed.

Dispersal: Wind, dumped garden waste and contaminated soil.

Control: Hand-pull or herbicides.



Ricegrass

Spartina anglica

Native to Europe

Description: Intertidal grass with tapering leaves which become yellowish in winter.

Flowers: Stiff, stout flowering stems to 1.5m, with 2-6 25cm long flowering spikes.

Fruit/Seeds: Seed present.

Dispersal: By rhizomes in water, mud and during removal. Seeds spread in water and mud.

Control: Eradication zones have been established.

Report to PWS or DPIPWE.



St. John's wort

Hypericum perforatum



DECLARED

Native to Europe, West Asia and North Africa

Description: Upright perennial shrub to 1m, stems green to red-brown. Opposite leaves to 3cm with translucent glands.

Flowers: Spring-summer, 1-2cm yellow five petaled flowers.

Fruit/Seeds: Fruit sticky three-celled capsules containing many small brown seeds.

Dispersal: Fruit may stick to livestock, animals, clothes and machinery. Spreads by lateral roots and seeds by wind, water and contaminated soil.

Control: Selective grazing, pasture management and/or herbicides.

**POISONOUS TO LIVESTOCK,
PARTICULARLY HORSES AND GOATS.**



Sea spurge

Euphorbia paralias



Native to Western Europe and the Mediterranean

Description: Small, multi-stemmed herb with small, closely-packed leaves and toxic, milky sap.

Flowers: September-May – tiny, cupped in yellow-green bracts at tops of stems.

Fruit/Seeds: Grooved capsules with three long seeds.

Dispersal: Wind, water (including ocean currents), beach equipment. Also regrows from root fragments.

Control: Start with small infestations. Hand pull (with gloves and safety glasses). Double bag flowering plants and dispose of responsibly.



Sea wheatgrass

Thinopyrum junceiforme

Native to Europe

Description: Grass to 40cm, often blue-green, leaves flat or convolute and often sharply pointed.

Flowers: December – in a branching arrangement.

Fruit/Seeds: Very brittle, soon falling from plant.

Dispersal: By seed and rhizomes.

Control: Eradication zones have been established. Report to PWS or DPIPWE.



Serrated tussock

Nassella trichotoma

WONS

Native to South America

Description: Hardy tussock grass, remaining mostly bright green in summer when native tussock grasses have browned off. Flower-heads droop to the ground in summer. Leaf bases underground are whitish.

Flowers: Purple-ish in an open arrangement with flower-heads drooping.

Fruit/Seeds: Copious long-lived seed.

Dispersal: Wind, soil, animals and machinery.

Control: Eradication and containment zones have been established. Contact DPIPWE for advice.



Slender thistles

DECLARED

Carduus pycnocephalus & *Carduus tenuiflorus*

Native to Western and Southern Europe

Description: Upright herbs to 1m with spiny, winged stems. Leaves alternate with spine-tipped teeth or lobes, may appear woolly, 5-20cm long.

Flowers: Flower-heads pink or purple, in clusters of 2-4 (*C. pycnocephalus*) or 3-8 (*C. tenuiflorus*).

Fruit/Seeds: Typical thistle fruits with shiny seeds attached to feathery ring of bristles (pappus).

Dispersal: Wind, water, animals, contaminated soil and produce, dirty equipment and machinery.

Control: Dig out smaller areas. Mechanical removal, cultivation, pasture management and/or herbicides for larger infestations.



Spanish heath

DECLARED

Erica lusitanica

Native to Spain, Portugal and France

Description: Woody shrub with small, needle leaves.

Flowers: June-September – copious small, tubular white-pink flowers in twos or threes.

Fruit/Seeds: Capsule around 3mm long with 80-100 dust-like seeds in summer.

Dispersal: Wind, water, animals, roadside equipment and garden waste. Numerous soil-stored seeds are viable for four years.

Control: Hand-pull small plants in moist soil and follow-up well. Cut and paint or drill and fill larger plants before seed is produced.



Sweet briar/Rosehip

Rosa rubiginosa

Native to Europe, West Asia

Description: Erect or scrambling deciduous shrub to 3m with thorny stems, prickly leaves and fragrant flowers and leaves. Problem weed of pasture and native grasslands.

Flowers: Late winter to spring – large, pink with five petals.

Fruit/Seeds: Red, egg-shaped hip contains numerous seeds.

Dispersal: Seeds and root/crown fragments spread by water, birds, animals, dumped garden waste and soil. Also suckers.

Control: Hand-pull small plants. Cut and paint larger plants. Treat and bag the rosehips. Burning waste in-situ may be an option. DPIPWE control guide available.



Sweet pittosporum

Pittosporum undulatum

Native to Eastern Australia

Description: Dense, spreading tree to 25m with shiny, wavy leaves to 15cm long.

Flowers: Spring – creamy-white, scented and bell-shaped in clusters of 4-5.

Fruit/Seeds: Autumn-winter – hard, round, orange berries with 20-30 sticky, orange-red seeds.

Dispersal: Seeds and root/crown fragments spread by water, birds, animals, dumped garden waste and soil. Also suckers.

Control: Hand-pull or dig out (remove all roots) or cut and paint/drill and fill larger plants/trees.



Tree lucerne

Chamaecytisus palmensis

Native to Canary Islands

Description: Dense, weeping shrub to 6m with leaflets in threes.

Flowers: June-October – masses of creamy-white pea flowers.

Fruit/Seeds: Downy-hairy pods to 6cm long with up to 10 black-brown seeds.

Dispersal: Water, ants, planting, dumped garden waste and soil

Control: Cut and paint, then hand-pull new seedlings. Stock will eat leaves and small branches.



Tree lupin

Lupinus arboreus

Native to California

Description: Woody shrub to 2.5m with leaflets resembling the spread of a hand. Mostly coastal, particularly in sand dunes.

Flowers: Spring – many fragrant yellow pea flowers.

Fruit/Seeds: Hairy pods with 10 poisonous, hard, black seeds.

Dispersal: Water, ants, planting, dumped garden waste and soil.

Control: Hand-pull small seedlings or cut and paint.



Wandering creeper

Tradescantia fluminensis

Native to South America

Description: Creeper forming dense mats to 50cm deep with stems to 4m long.

Flowers: September-February – in clusters at ends of branches, with three white, spreading petals.

Fruit/Seeds: Three-chambered capsule with six seeds, usually not viable.

Dispersal: Spreads by rooting stem fragments in water, dumped garden waste and soil. Also roots at the nodes.

Control: Hand-pull or dig out. Bag and dispose.



Watsonia

Watsonia meriana

Native to Southern Africa

Description: Vigorous herb to 2m, with sword-like, rigid leaves. Forms dense ground-layers.

Flowers: December-April – tubular, orange-pink-red with 10-15 in a spike.

Fruit/Seeds: Rarely – green capsules with 5mm black seeds in summer.

Dispersal: Mainly stem bulbils and corms spread by water, slashing, ants, mud, garden waste and soil.

Control: Dig out in moist soil to ensure all corms are removed. Bag all material and dispose.



White weed

Lepidium draba

DECLARED

Native to Mediterranean region and Western Asia

Description: Long-lived herb to 90cm, stems and leaves covered in soft, minute hairs greyish-green to bluish-green.

Flowers: Late spring-early summer in dense clusters, each flower has four small white petals.

Fruit/Seeds: Fruit heart shaped with two inflated chambers, each containing 1-2 seeds. Mature in summer.

Dispersal: Often spread as root fragments in contaminated soil and on machinery. Also by seed - especially when slashed while seed is still on plant.

Control: Intensive cultivation, selective grazing and herbicides.



Willows

Salix spp.

WONS
DECLARED

Native to Europe

Description: Deciduous trees with one to many trunks to 30m with various leaves, on or near river-banks.

Flowers: Spring – in thin, drooping caterpillar-like brushes.

Fruit/Seeds: Seeds viable only a few days in November.

Dispersal: Mainly by stem fragments in water, garden waste and machinery.

Control: Contact DPIPWE about removing and replacing willows on waterlines. Dig out small plants in moist soil or cut and paint. Mulch heavily.



Wild pussy willow

Salix cinerea

WONS
DECLARED

Native to Europe

Description: Shrub/small multi-stemmed tree, wide rounded crown. Leaves broad, hairy, and deciduous.

Flowers: Late autumn-spring – male flowers grey and yellow furry buds, female flowers pale green, cone-shaped buds.

Fruit/Seeds: Small with silky hairs on one end, ripening in summer.

Dispersal: Mostly by seed on wind or in water. Also sprouts from broken stems.

Control: Hand pull or dig out smaller plants. Cut and paint or stem inject larger trees with herbicide – remove all cut material.

LIMITED DISTRIBUTION – REPORT TO DPIPWE IF FOUND.



Winter euryops

Euryops abrotanifolius

Native to Southern Africa

Description: Shrub growing to 1m with dark-green, alternate, finely-divided leaves.

Flowers: Winter-spring – flower heads to 5cm across, bright yellow daisy-type flowers.

Fruit/Seeds: Small ribbed seeds topped by pappus (tuft of feathery bristles).

Dispersal: Seeds spread on wind and in contaminated soil.

Control: Hand pull or dig out smaller plants. Cut and paint larger infestations.

For more advice on weeds, refer to online control guides or contact:

Department of Primary Industries, Parks,
Water and the Environment

1300 368 550

dpiuwe.tas.gov.au/invasive-species/weeds

Australian Government
weeds.gov.au

Weeds Australia
weeds.ala.org.au

NRM South
nrmsouth.org.au

Tasmanian Herbarium
03 6226 2635

or

Your Local Council

This booklet was adapted from Coastal Weeds of Tasmania
with the kind permission of the Australian Plant Society,
North-West Tasmania Branch.



Published by NRM South and the Southern Tasmanian
Councils Authority, March 2010.

Revised and republished March 2017, through funding from
the Australian Government's National Landcare Programme.