WEEDS

Garden Plants Going Wild

★ NEW EDITION ★
COMPLETELY REVISED & UPDATED





A Guide to Identification and Control

www.weedsbluemountains.org.au

distribution of weeds

The area west of Sydney known as the Blue Mountains contains a wide variety of ecosystems with a great diversity of flora and fauna. It encompasses more than one climatic zone and soil type, and rainfall also varies. So does the distribution of native plants and weeds.

The distribution of each weed is shown on the bottom right of the weed pages.



This symbol indicates more information is available from BMCC Bushcare (see back cover).

BLUE MOUNTAINS

UPPER MOUNTAINS

LOWER MOUNTAINS

glossary

crown the point where stems join roots; a method for removing certain plants

ecosystem a community of living organisms interacting with each other and their environment

layer grow roots where stems touch the ground

rhizome an underground stem which grows horizontally, producing roots and shoots

sucker send up shoots from roots

вм	Blue Mountains		
LM	Lower Mountains		
UM	Upper Mountains		
вмсс	Blue Mountains City Council		
DECC	Dept of Environment, Water & Climate Change		
EPA	Environment Protection Authority (part of DECC)		
NPWS	National Parks & Wildlife Service (DECC)		
SCA	Sydney Catchment Authority		
BMCS	BM Conservation Society		
WPR	Wildplant Rescue		
sp, spp	species		
cvs	cultivars		

abbreviations

background colours woody weeds

herbaceous weeds

climbers, scramblers & groundcovers

acknowledgments

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further information - check your library

Bush Regeneration Robin Buchanan 1989 Bringing Back the Bush Joan Bradley 1988

Bush Regenerators' Handbook National Trust 1991

Making Your Garden Bush Friendly L. McLoughlin & J. Rawling 2001 Native Plants of the Blue Mountains M. Baker & R. Corringham 1995 Living Near the Bush Blue Mountains Conservation Society 1998 Birdscaping Your Garden George Adams 1996

Environmental Weeds A Field Guide for SE Australia Kate Blood 2001 Bush Invaders of South-East Australia Adam Muyt 2001

Weeds of the South-east FJ & RG Richardson, LCH Shepherd 2006

buying native plants

Local native plants don't become weeds. You can buy local bush plants for your area from Wildplant Rescue, and Blue Mountains Conservation Society nursery. (See Contacts back cover.)

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WEEDS

front cover

The front cover of this booklet - it's a beautiful weed-free garden, right? No, sadly, this is a creekline in Leura. It is choked by weeds. Blackberry, honeysuckle, buddleia, privet, box elder, bird cherry, white poplar, periwinkle, buttercup, tansy, and a fiercely thorny wild climbing rose completely block, cover and shade the water below. These weeds have escaped from our gardens.

back cover

Pristine Megalong Creek, Old Ford Reserve

4-5

The Value of

Those of us who live in the Blue Mountains, in the City within a World Heritage Area, are highly privileged: almost all of us live within sight of the bush; all of us are bushland neighbours. The values of our bushland are many and substantial:

- Our bushland is our natural heritage. It is a large part of what makes the Blue Mountains unique. It determines the visual identity of the landscape. Our bushland helps us to define our place on earth.
- Our bushland has high aesthetic value, dividing our urban spaces with its characteristic greenness and the familiar shapes of gum trees. Our bushland reduces noise, air and visual pollution, creates a feeling of peace and space, and enhances the residential life of our townships and villages.
- Our bushland aids our health by providing a means of relief from everyday stress. Our bushland offers an environment which restores our sense of wellbeing, a place where physical and mental balance can be achieved.
- Our bushland provides a place for a variety of recreational activities, and is also an invaluable resource for the educational and scientific study of its flora, fauna, ecology, geology, and history. It attracts large numbers of tourists who contribute substantially to our economy.
- Our bushland reduces soil erosion and land degradation.
 It protects the water quality in our creeks and rivers and in our drinking water catchments; it acts as a natural filter for all the essential biological cycles on which all people on earth depend.
- Our bushland provides habitat for indigenous plant and animal species, conserves rare and endangered flora and fauna, and enables the long term survival of existing animal and plant communities.
- Our bushland provides a buffer between the developed areas of the City and the World Heritage National Park, and helps to protect the integrity of the Park's ecosystems.
- Our bushland provides wildlife corridors and vegetation links with our National Park, enabling us to experience our native wildlife in our urban areas.

Above all, our bushland conserves and protects the biodiversity of the unique plants and animals of the Blue Mountains.

Our Bushland



Katoomha Creek

With the privilege of living so close to bushland comes the responsibility for its conservation and protection. In many Blue Mountains townships residents have taken positive action to protect and restore their bushland reserves by joining the volunteer Bushcare movement (p.49).

How Weeds Invade our Bushland

Our Blue Mountains townships and villages perch on the ridges above some of the most biologically diverse, fragile and beautiful natural vegetation in the world. We people have dramatically altered our natural environment, and all human activities carried out in our townships affect our downslope bushland, our National Park, and our streams and rivers.

Off the Garden, Into the Bush: Urban Runoff

Stormwater rushes off all our hard surfaces - roads, roofs, car parks, garages, factories and driveways, carrying with it the pollutants and detritus of everyday life. These include oils and chemicals, rubbish and organic litter, soil from cleared land, fertilisers, pesticides, herbicides, sewage from overflows, weed seeds and animal faeces.

This fast-flowing stormwater cocktail enters the bush, erodes the watercourses, silts the creeks, and changes the nature of the soil. Many of the components of this urban runoff increase the nutrient levels in the soil. Most of our native plants are adapted to low nutrient conditions: they fail to thrive, they may die. But this moist, fertile soil favours the growth of weeds, and invasive species such as Montbretia, Blackberry and Privet soon move in.

Out of the Garden, Into the Bush: Bush Invaders

Many ornamental plants have escaped from our parks and gardens to become bush invaders. Some spread their seed on the wind, some rely on water, some eject their seed explosively. Some use us, or birds, or other animals, machinery or soil to move their seeds about, some spread vigorously without the use of seeds at all. Many plants use more than one of these dispersal methods.

Weedy plants have certain characteristics in common, including few enemies, fast growth, the ability to grow almost anywhere, and the ability to reproduce and spread rapidly. All of the weeds in this book are aggressive competitors with our unique native plant species. Weeds destroy the habitat of our unique indigenous fauna.

Over the Fence, Into the Bush: Dumping

Some people, however, introduce weeds into bushland by deliberately dumping garden prunings, grass cuttings, leaf litter or soil. Dumped plants, rakings and clippings quickly grow and invade the bush. Dumped soil introduces weed seeds, buries native plants and their seeds, and compacts the soil.

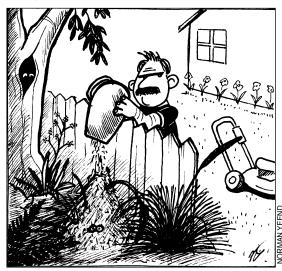
Out of the Suburbs, Into the Bush: Disturbance

Why are weeds so prolific along roadsides, bushland edges, along watercourses and tracks? The cause is human activity again: any kind of disturbance of the original soil conditions leads to weed invasion. Disturbance such as clearing, excavating, slashing, mowing or burning creates opportunities for weed invasion. The disturbance of driving, riding, parking and walking on bushland vegetation causes erosion and compaction of soil, and introduces weed seeds.

What's Wrong with Weeds?

Bush Cancer

Weeds are plants free of their natural predators which thrive in changed bushland conditions. They compete vigorously with our native plant species and frequently dominate and replace them. They degrade and destroy the habitat of our native fauna. They restrict animal and human access to tracks, creeks and waterholes. They reduce local biodiversity, and they permanently change ecosystems. Like many cancers, in the early stages the invasion is slow and insidious, but once recognised weeds can be cut out and the bush can recover. If we leave it too long however, weeds will destroy our bush.



Not in my backyard!

We Can Help by

- ★ reading this book and learning to recognise the weeds
- * understanding how and why weeds spread
- ★ removing bush-invading plants from our gardens
- ★ choosing only bush-friendly garden species
- ★ composting and mulching green waste
- ★ disposing of other waste at the tip
- ★ keeping our gardens within their boundaries
- ★ retaining car wash and garden water on our blocks
- * choosing to use phosphorus-free detergents
- ★ using only organic slow-release fertilisers
- ★ mulching to improve water absorption and retention
- ★ keeping garden wastes out of the road gutters
- ★ picking up pet wastes and disposing of them responsibly
- ★ always keeping to authorised bushland tracks
- ★ encouraging our friends and neighbours to follow these principles

★★ and joining a local Bushcare group (p.48) ★★

The challenge for us all as we become increasingly urbanised is to develop sustainable lifestyle patterns that will enable us to live in harmony with our bushland.

NOXIOUS WEED CLASS 4

Blackberry

Rubus fruticosus spp. agg.

NOXIOUS WEED CLASS 4





POACEAE

Description

Phyllostachys species

- There are two types of Bamboo: clumping, which stay where they are put, and running (rhizomatous), which are invasive and spread rapidly and vigorously, quickly getting out of control.
- Two common species of running bamboo, Golden Bamboo (Phyllostachys aurea) and Black Bamboo (Phyllostachys nigra), are declared noxious in the Blue Mountains.
- Bamboos have rounded woody stems: those of Golden Bamboo (5m) are yellowish, slightly flattened and grooved; those of Black Bamboo (8m) become shiny black with age.
- Bamboos rarely if ever flower, and thus do not produce seed.

Dispersal

Running (rhizomatous) bamboos spread by means of very long underground stems (rhizomes) which send up multiple shoots. Bamboo is often dumped in bushland.

Impact on Bushland

Highly competitive, create an impenetrable network of roots, heavy leaf litter and dense shade, displace native plants.

Alternative Planting

Bush-friendly local natives such as Banksias, Hakeas and Sheoaks provide good screening, windbreaks, and habitat. Golden and Black Bamboo may be safely replaced by clumping bamboo species, which are decorative and easy to control.

Control

As for Woody Weeds (p.43), or slash stems and spray when regrowth reaches 1m. Repeat as necessary.





ROSACEAE

Description

- Semi-deciduous woody shrub from Europe producing long arching thorny canes. Forms huge impenetrable thickets.
- Leaves are hairy, prickly, divided into 3 or 5 serrated leaflets, dark green on top, pale underneath.
- Flowers are 5-petalled, resemble a single rose, pink to white, and occur from November to March.
- Bunches of succulent berries ripen from green to black in late summer and autumn.
- Native Rubus species are less vigorous and aggressive, do not form extensive thickets, and are found in moist sheltered areas.

Dispersal

Birds and foxes distribute the seed; the plant shoots vigorously from its crown, canes root down to produce new plants, it sends up shoots from its roots, and it regrows from root fragments.

Impact on Bushland

Highly invasive, competes aggressively, rapidly forms thickets with a dense canopy of shade, excludes and replaces native vegetation. Threatens sensitive and fragile ecosystems.

Alternative Planting

Native *Rubus* species (*R. parvifolius*, *R. hillii*); local lillipillies. Strawberries and Blueberries - protect fruit from spread by birds.

Control

Wear protective gloves, clothing, and eye protection. •Cut through and paint 'root ball' if >20mm (p.43). •Shorten canes, scrape

and paint long lengths in summer (p.45).

•Cut back canes, spray large infestations

when regrowth reaches 1m.

NOXIOUS WEEDS CLASS 4

Buddleia

BUSH INVADER

Buddleja davidii

Brooms

Scotch Broom Cytisus scoparius Cape Broom Genista monspessulana



FABACEAE

Description

- Woody, perennial much-branched shrubs to 3m or more from Europe, common in disturbed areas. Tolerate a wide range of conditions and produce huge numbers of long-lived seeds.
- Scotch Broom has sparse, tiny grey-green leaves with three leaflets; older plants may be almost leafless. Bright yellow pea flowers occur in spring. Pods are black, seeds brown, stems ridged.
- Cape Broom is leafier, with larger, rounder, softer leaves. Smaller yellow pea flowers cluster on the end of the branchlets. The pods are brown and hairy, seeds are black.

Dispersal

Spread by seed: pods eject seeds up to 4m from the plant (up to 6000 seeds per plant per year). Seeds can be also be spread by water, animals, mud on shoes or tyres, or in contaminated soil.

Impact on Bushland

Grow rapidly, competing aggressively with native plants. Form dense stands and dramatically reduce biodiversity. Transform the ecosystem into one dominated by weeds.

Alternative Planting

Native Dogwood (Jacksonia scoparia, LM) 3m; Sunshine Wattle (Acacia terminalis) 2m; Golden Glory Pea (Gompholobium latifolium); other Gompholobium species, native pea flowers (Pultenaea spp.). Golden Bells (Forsythia viridissima); Mexican Orange Blossom (Choisya); Pieris; Azaleas.

Control

Do not mow or slash. Pull or dig out, or cut and paint when pods are green, as described on p.43. Hand pull seedlings when soil is moist.





BUDDLEJACEAE

Description

- · Also called Butterfly Bush; a large brittle woody shrub to small tree from China and Japan, fast-growing, deciduous.
- Leaves are long and narrow with a finely-toothed pointed tip, dull green above, grey-white and hairy below.
- Lilac, purple or white flower sprays, borne on arching branches, are long, narrow and fragrant, and made up of masses of small tubular flowers, orange inside. The lilac is the most weedy. Summer flowering.
- Prolific numbers of small brown cylindrical fruits are produced in late summer, each tailed to aid dispersal.

Dispersal

Seeds are mainly dispersed by wind and water, but also by machinery, vehicles, the movement of soil, and by dumping.

Impact on Bushland

Buddleia can grow almost anywhere, but prefers nutrient-rich watercourses and creeklines, where it quickly dominates, shading out and replacing native plant species.

Alternative Planting

Mint Bushes (Prostanthera incana, P. caerulea) 2m; Native Indigo (Indigofera australis, the Mounts), 2m. Grass Trees (Xanthorrhoea spp) also attract butterflies. Lilac (Syringa vulgaris); Ceanothus species.

Control

Dig out, or treat as for Woody Weeds, p.43. Repeat as necessary. Pull seedlings when soil is moist.



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Camphor Laurel

Cinnamomum camphora

NOXIOUS WEED CLASS 4

Cherry Laurel

BUSH INVADER

Prunus laurocerasus



LAURACEAE



- Large spreading evergreen tree to 20m from China & Japan; bark is grey-brown with deep vertical cracks. Poisonous.
- Leaves are light green and glossy with a wavy margin and yellow mid-rib; the lower surface is dull green. They smell strongly of camphor when crushed. Twigs are often red.
- Masses of small white insignificant flowers occur in spring.
- Fruit is a 10mm black berry ripening in autumn and early winter.

Dispersal

Spread by birds and possums deep into bushland.

Impact on Bushland

Invades moist bushland slopes and gullies, creating dense shade, competing with and taking over from native species, and continuing to inhibit their regeneration even after its removal.

Alternative Planting

Water Gum (*Tristaniopsis laurina*) to 15m; Lillypilly (*Acmena smithii*) to 10m; Cedar Wattle (*Acacia elata*) 10m+; Buckinghamia (*Buckinghamia celsissima*) 8m.

Cape Chestnut (Calodendron capense) to 10m.

Control

Removal permitted under Tree Preservation Order if less than 10m. A difficult tree to control: should be treated by tree injection (p.43), but may reshoot and also sucker. Hand pull seedlings from moist soil. Be prepared for considerable follow-up work. If removing these trees from waterways or very steep land, advice must be sought from BMCC (see Contacts and p.42).



ROSACEAE

Description

- Hardy, perennial, multi-stemmed and spreading woody shrub to small tree, from SE Europe and SW Asia. Formerly commonly used for hedges, screens and windbreaks.
- Leaves are large, leathery and oblong with bright green shiny upper surfaces, pale and dull underneath. The veins are distinctly yellow.
- Upright spikes of tiny strongly scented ivory flowers are produced in early spring.
- Clusters of cherry-sized succulent berries ripen from green to purplish black through summer and autumn.

Dispersal

Seeds are spread by birds. The berries attract aggressive birds like the Common Myna, Pied Currawong, and Sulphur Crested Cockatoo.

Impact on Bushland

Invades sensitive forests, shades out and replaces native species, reduces biodiversity, and degrades habitat for native fauna.

Alternative Planting

For screens, windbreaks and hedges which provide quality habitat use local native species such as Banksias, *Grevillea acanthifolia*, Hakeas or Sheoaks (*Allocasuarina littoralis, distyla,* or *torulosa*). Many Viburnum species (but not *V. tinus*), and Camellias can also be good hedging plants.

Control

Must use herbicide: this plant suckers, layers, and reshoots from cut stems. Cut and paint (p.43), or inject larger plants (p.43). Treat suckers by scraping (p.45). Pull out seedlings when soil is moist.



BUSH INVADER

Acacia baileyana

Cotoneaster

INVADER

BUSH

Cotoneaster species







ROSACEAE



MIMOSACEAE

Description

- Fast-growing wattle to 10m with drooping branches, from the Cootamundra area. Often called 'Coota-bloody-mongrel' wattle.
- Leaves are small, fern-like, silvery grey-blue, with up to 24 pairs of leaflets, 6-8mm long.
- Produces prolific clusters of bright golden yellow fragrant fluffy ball flowers to 8mm in diameter, winter to early spring.
- Huge numbers of brown to black seeds are produced in large red-brown flattened pods. Seeds are long lived in the soil.
- Gets fungal galls, is shallow rooted, may blow over in high winds.

Dispersal

Seeds are spread by ants, wind, dumping, water and contaminated soil. They germinate easily, and massively after fire or disturbance. Available at nurseries, widely planted in gardens and on roadsides.

Impact on Bushland

A hardy tree, tolerates most conditions, including drought when established. Invades intact bushland, displaces local wattles, forms dense stands which shade out other native plants.

Alternative Planting

Local wattles only: Sydney Golden Wattle (*Acacia longifolia*), Sunshine Wattle (*A. terminalis*), Cedar Wattle (*A. elata*). **Do not plant non-local wattles such as Queensland Silver Wattle** (*A. podalyriifolia*), also a serious bush weed. Forsythia (p.14), Golden Chain Tree (*Laburnum* 'Vossii').

Control

Cut down mature plants, cut and paint younger plants (p.43). Hand pull seedlings from moist soil. Dispose of ripe seeds carefully. Follow up seedling regrowth.

BLUE MOUNTAINS

Description

- Perennial woody shrubs, mostly from China, growing from prostrate to 2-4 metres tall and wide or more; hardy, fast growing, some deciduous; many formerly used as hedges.
- Flowers are small, white, often insignificant, densely clustered, highly attractive to bees, occurring from spring to summer.
- Fruit are numerous, in conspicuous clusters of small berries, orange to red, autumn into winter.
- The weediest Cotoneaster in the Mountains is Cotoneaster franchetii (see photos). Other seriously weedy species are C. pannosus, C. lacteus, C. glaucophyllus, and C. horizontalis.
- Many other Cotoneaster species have weed potential.

Dispersal

Seeds are spread into bushland by fruit-eating birds.

Impact on Bushland

Cotoneaster will grow virtually anywhere a bird drops the seeds. Thickets under tall trees and other perching places displace local native plant species and shade the soil. Habitat is lost, and other weeds invade.

Alternative Planting

Local Eucalypts, eg, Sydney Peppermint (*E. piperita*) for Gang Gang Cockatoo food; Blueberry Ash (*Elaeocarpus reticulatus*) to 8m; Lillypillies (*Acmena smithii*) to 10m; local Banksias such as Heath Banksia (*B. ericifolia*) to 4m, Old Man Banksia (*B. serrata*) to 3m. Camellias or Virburnum (but not *V. tinus*) are suitable for hedges.

Control

As for Woody Weeds, p.43. Bag fruit, send to tip. Pull out seedlings when soil is moist.

BUSH **INVADER**

Gorse

NOXIOUS WEED CLASS 3

Ilex aquifolium



AQUIFOLIACEAE

Description

- · Large evergreen shrub to small tree from woodlands in Europe, East Asia and North Africa; trees are either male or female, both produce flowers. Hardy, tough, and adaptable.
- Leaves are thick and tough, dark green, glossy, indented and exceedingly spiky; on older branches they may be quite smooth.
- Flowers are small, whitish, inconspicuous, sweetly scented, pollinated by bees. Female trees must grow within bee range (30m or so) of a male tree to be pollinated.
- · Bunches of bright red berries, poisonous to humans but not to birds, are borne on female trees in winter.

Dispersal

Birds spread the seed into sensitive bushland; Holly also spreads by suckering and layering, and can form tall dense thickets.

Impact on Bushland

Dominates the tall shrub layer in moist, nutrient-rich sheltered bushland, creating deep shade in which native species can neither grow nor germinate, changing the environment.

Alternative Planting

Heath Banksia (Banksia ericifolia) 4m; Lillypilly (Acmena smithii) 10m; Blueberry Ash (Elaeocarpus reticulatus) 8m.

Camellia species (eg. Camellia sasangua), to 5m.

Control

Treat when growing strongly (not winter). Cut & paint (p.43), or scrape (p.45) small plants. Inject larger specimens (p.43). Repeat treatment as often as necessary. Pull small seedlings from moist soil.



Ulex europaeus



FABACEAE

Description

- · Ferociously prickly, perennial, fast-growing evergreen shrub to 5m, from Western Europe. Also called Furze.
- · Stems are many-branched, rough, brown, ribbed, woody and densely hairy.
- · Leaves are numerous, grey-green, hairy, narrow and spiny.
- · Abundant bright yellow clusters of fragrant pea flowers are produced from late winter to spring, again in autumn.
- · Greenish-brown, oval-shaped hairy pods forcefully eject prolific numbers of long-lived seeds up to 5m from the plant. Soil may contain as many as 10,000 seeds per square metre.

Dispersal

Seed is dispersed by water, in soil, on boots and on machinery.

Impact on Bushland

Follows watercourses, infests swamps, forming impenetrable thickets which replace rare native plants and threaten fragile bushland environments. Gorse is also a serious fire hazard.

Alternative Planting

Dagger Hakea (Hakea teretifolia) 3m; Mountain Devil (Lambertia formosa) 3m; Heath Banksia (B. ericifolia) to 4m; Woolly Tea Tree (Leptospermum grandifolium) 3m; local species of Gomphalobium. For hedge replacement see suggestions for Cherry Laurel p.14.

Control

Dig out, or treat as for Woody Weeds, p.43. Expect to remove seedlings for many years.

Gorse is a Weed of National Significance



17





Description

- A many-stemmed upright deciduous shrub from temperate Himalayan regions, 2-4m, with stems which are smooth, round, hollow and bamboo-like. Fast-growing and vigorous. Also called Elisha's Tears.
- Leaves are large, soft, heart-shaped at the base, with a slender point. New growth is red.
- The white tubular flowers (Dec to May) grow in long drooping lantern-like spikes, partly concealed by deep reddish-purple bracts, which resemble leaves, and are found at the base of the flowers.
- Fruit is a round purplish-black fleshy berry, 10mm (autumn), containing more than 100 small seeds.

Dispersal

Spread mainly by birds, which excrete the seeds, and also by water, machinery, vehicles, the movement of soil, and by dumping.

Impact on Bushland

Introduced by birds deep into fragile, sensitive, moist bushland, forms thickets and dense shade, displaces native vegetation.

Alternative Planting

Blueberry Ash (*Elaeocarpus reticulatus*) to 8m; Lillypillies (*Acmena smithii*) to 10m; smaller local Bottlebrushes eg *Callistemon citrinus* - try the pink swamp form); local shrub Grevillea (*G. acanthifolia*).

Showy flowers: Mountain Laurel (Kalmia latifolia); Camellias.

Control

Remove fruit, bag it and send to tip; cut and paint stems (p.43); dig out.









VERBENACEAE

Description

- Large fast-growing much-branched sprawling shrub from Central and South America, with square brittle prickly stems. Can become vine-like, and scramble up into trees.
- Oval leaves are mid-green, deeply wrinkled and hairy, with toothed edges and a distinctive aromatic odour when crushed.
- Flower heads are flat, 2-3cm across, consist of many tiny tubular flowers, and come in a variety of colours from cream through pink and red, often in combination. Flowers most of year.
- · A cluster of fleshy purplish-black berries follows the flower.

Dispersal

Spread into bushland by fruit-eating birds, and also by garden dumping: stems lying on moist soil will layer (grow roots).

Impact on Bushland

Aggressively invades rich soils in open forest, disturbed rainforest and creeklines, competes vigorously with native species, forms impenetrable thickets, creates dense shade and heavy leaf litter. Reduces biodiversity, transforms ecosystems.

Alternative Planting

Dense local native shrubs: Spike Wattle (*Acacia oxycedrus*); Needlebush (*Hakea sericea*); Blackthorn (*Bursaria spinosa*); Mountain Devil (*Lambertia formosa*).

Control

Remove and bag fruit. Pull out, dig out, or cut and paint (p.43); Do not leave cut stems on the ground.

Lantana is a Weed of National Significance

LOWER MOUNTAINS

Large-leaf Privet

Ligustrum lucidum

NOXIOUS WEED CLASS 4

Small-leaf Privet

Ligustrum sinense

NOXIOUS WEED CLASS 4



OLEACEAE

Description

- Also known as Broad-leaf Privet, Tree Privet and Glossy Privet: a robust, vigorous, evergreen, fast-growing large shrub to small tree from Asia.
- Leaves are oval with a pointed tip, up to 13cm long, dark glossy green with a paler dull undersurface, smooth margin.
- Abundant heavily-scented small white tubular flowers are produced in clusters in summer; they are highly allergenic.
- · Clusters of small round blue-black berries persist into winter.

Dispersal

Seed is spread deep into bushland by fruit-eating birds, both native and exotic, and is also washed down waterways, producing prodigious numbers of rapidly-growing seedlings.

Impact on Bushland

Infests waterways and creeklines affected by urban runoff (p.6), shading out and replacing native species, creating an ecosystem dominated by weeds.

Alternative Planting

Blueberry Ash (*Elaeocarpus reticulatus*) to 8m; Lillypilly (*Acmena smithii*) to 10m; Black Wattle (*Callicoma serratifolia*) to 8m; Grey Myrtle (*Backhousia myrtifolia*) to 10m.

Fried Egg Plant (Gordonia axillaris) to 5m.

Control

As for Woody Weeds (p.43). Poison all stems. Do not leave cut material on the ground. Pull seedlings by hand from moist soil. Seek advice from BMCC before removing from watercourses or steep land (p.42).





OLEACEAE

Description

- Also known as Chinese Privet and Hedge Privet: a muchbranched, hardy, evergreen, fast-growing shrub to 4m from Asia, formerly used extensively for hedging.
- Leaves are oval with a pointed tip, to 6cm long, and often have a wavy margin.
- Masses of heavily-scented tiny white tubular flowers occur in drooping sprays in spring; they are highly allergenic.
- Sprays of small round blue-black berries persist into winter.

Dispersal

One plant may produce up to a million seeds which are spread into bushland by birds, and are also washed down waterways. Small-leaf Privet seedlings grow like a carpet in every silt deposit.

Impact on Bushland

Seeks out the more fertile soils of gullies, creeklines and rainforest edges, and watercourses affected by urban runoff (p.6); shades out native plants, transforms habitat.

Alternative Planting

Watercourses: Long-leaved Lomatia (Lomatia myricoides); Water Gum (Tristania neriifolia), to 3m; Swamp Baeckia (Baeckia linifolia). Hedging: Lillypilly (see opp.), Woolly Tea Tree (Leptospermum grandifolium). Rondeletia (R. strigosa); May Bush (Spiraea cantoniensis).

Control

Every stem must be poisoned (p.43). Check for nests and dreys. Do not leave woody material lying on ground. Pull seedlings by hand. Contact BMCC before removing from watercourses or steep land (p.42).

Pussy Willow

Salix cinerea

NOXIOUS WEED CLASS 3

Radiata Pine

BUSH INVADER

Pinus radiata



SALICACEAE







PINACEAE

Description

- All willows, except Weeping Willow and two hybrid Pussy Willows, are declared noxious in NSW. Black Willow (Salix nigra) is also a significant Mountains problem.
- Pussy Willow (also called Grey Sallow) is a large deciduous, spreading, many-stemmed shrub to small tree from Europe.
- The noxious Pussy Willow can be distinguished from others by examining peeled stems, which show prominent ridges.
- Leaves are broad and widest beyond the middle; edges may be wavy; leaves are not glossy, and are flatter than the hybrid Pussy Willows.
- 'Catkins' are produced in mid spring; the catkins on male trees are yellowish with pollen, the females are grey-green.
- 'Fluff' from female trees, late spring, contains tiny seeds.

Dispersal

Seeds travel easily on wind and water for many kilometres.

Impact on Bushland

Willows are highly invasive fast-growing weeds of streams, swamps and moist forest, shading the water, dropping their leaves, causing bank erosion, and leading to the destruction of natural ecosystems.

Alternative Planting

Replace with evergreen native creekline vegetation, eg, Black Wattle (*Callicoma serratifolia*) 6m; Water Gum (*Tristaniopsis laurina*) 8m; local native tea trees (*Leptospermum* spp), local native sedges, eg. Saw Sedge (*Gahnia sieberiana*).

Control

Inject (p.43) or scrape (p.45). Do not leave cut material lying on the ground. Hand pull seedlings from moist soil. See p.42 if removing this weed from waterways.



Description

- Very large vigorous quick-growing evergreen tree from California, to 50m, with dark grey-brown deeply ridged bark. It has a strong pine fragrance, and the whole tree is resinous and sticky. All parts can be allergenic. Also known as Monterey Pine.
- Leaves are soft dark green twisted needles, growing in groups of three. New shoots grow vertically at first ('candles').
- Pines do not flower. Rusty brown pollen-producing male cones cluster at the base of new shoots in spring; the females, soft and purple at first, develop into the familiar 10-15cm light brown pine cones.
- · Female cones produce large numbers of winged seeds.

Dispersal

Seeds spread some distance on the wind, and the cones are also carried deep into bushland by Yellow-tailed Black Cockatoos.

Impact on Bushland

Establishes readily, creates dense shade and carpets the ground thickly with needles, depletes soil nutrients and water, changes soil chemistry, excludes native plants. Favours the growth of weed seeds dropped by perching birds. A significant fire hazard.

Alternative Planting

Natural Yellow-tailed Black Cockatoo food: local native Hakea and Banksia spp, *Petrophile* and *Isopogon* spp; Mueller's Cypress Pine (*Callitris muelleri*); She-oaks (*Allocasuarina torulosa*, *littoralis*). Fast-growing windbreak: Leyland Cypress (*Cupressocyparis leylandii*).

Control

Can be removed without consent under Council's Tree Preservation Order if less that 10m. Cut low to the ground, or inject with herbicide (p.43).



Spanish Heath

Erica Iusitanica

BUSH INVADER

Agapanthus

BUSH INVADER

Agapanthus praecox ssp orientalis



ERICACEAE



- Erect woody fast-growing evergreen shrub with hairy stems and brittle roots from SW Europe. Also called Portuguese Heath.
- Leaves are tiny (3 to 7mm long), pointed, mid-green, and clustered densely on the stem.
- Flowers are profuse, small, papery, fragrant and bell-shaped, pink in bud, opening white. These flowers rattle softly when shaken. They appear from late autumn to early spring.
- Each flower produces numerous tiny seeds.
- Spanish Heath is often mistaken for a native. Native Epacrid flowers have five petals; Spanish Heath has four.

Dispersal

Seeds are spread by wind, water and gravity, by dumping, and in mud on boots and tyres. Also layers, and shoots from stems and roots.

Impact on Bushland

Follows watercourses and invades sensitive ecosystems; seeds, layers and suckers to form dense stands; its mass of fine matted roots crowds out natives; it replaces creekline vegetation.

Alternative Planting

Local native heath plants, eg *Epacris* spp for quality habitat for native fauna: *Epacris microphylla*, *E. pulchella*, *E. paludosa*; Kunzea (*K. capitata*, *K. ambigua*); *Logania albiflora*; Woolly Tea Tree (*Leptospermum grandifolium*).

Diosma (Coleonema pulchrum); Erica 'Springwood White'.

Control

Bag flowers and seed heads (send to tip); pull small seedlings by hand; cut and paint larger plants (p.43).





ALLIACEAE

Description

- Hardy perennial lily from South Africa, grows in thick clumps.
 Tough, hardy, likes full sun, grows in almost any soil, almost anywhere. Also called Lily of the Nile.
- Leaves are thick, succulent, dark glossy green and strap-like, to 50cm long. Poisonous. A miniature variety is also weedy.
- Large rounded heads of massed tubular flowers, blue or white, top a strong thick stem, to 1.2m tall, in summer.
- Numerous small black shiny seeds are produced in a 5cm three-sided capsule, end of summer into autumn.

Dispersal

The underground structure (rhizome, poisonous) forms large continually extending clumps, and seed may wash down waterways. Also frequently dumped on bushland edges.

Impact on Bushland

Spreads rapidly down drainage lines, but will also grow in dry areas. Dense clumping roots displace all other vegetation.

Alternative Planting

Spiny-headed Mat Rush (Lomandra longifolia) to 1m; local native Flax Lilies (Dianella spp) and Saw-sedges (Gahnia species).

Pride of Madeira (Echium fastuosum) 2m.

Control

Cut flower heads before seeds form. Mattock out clumps, try to get most roots. Pull seedlings by hand from moist soil when very small. Does not respond well to herbicide, but can be treated by cut and paint (p.43).



Coreopsis

BUSH INVADER

Creeping Buttercup

BUSH **INVADER**

Ranunculus repens







ASTERACEAE



- Perennial herbaceous yellow daisy from North America. forming dense clumps up to 1m x 1m. Dies down after seeding until the following spring. Also known as Calliopsis.
- Leaves are light to mid green, hairy, and very variable in shape.
- Flowers are golden yellow daisies with yellow centres, on long single stems. Long flowering period, profuse in summer.
- Produces copious black flattened seeds 2-3mm long with two papery wings. Germination rates are high.
- Has a short woody rhizome and fibrous roots.

Dispersal

Spreads by means of wind and water, the movement of soil contaminated with seed, and garden waste dumping.

Impact on Bushland

Prefers open areas and full sun, and was initially confined to roadsides, railway embankments, disturbed areas, and bushland edges. Now moving down watercourses into good bushland, following the siltation from urban runoff. Clumping and rapid spread crowd out native plants and reduce the germination of native seed.

Alternative Planting

Local native Hibbertias, eg H. serpyllifolia, H. monogyna; Yellow Buttons (Chrysocephalum apiculatum); local Rock Daisies (eg Brachyscome angustifolia).

Yellow Marguerite daisies, Yellow Flag Iris (Iris pseudacorus).

Control

Crown (p.44), making sure to remove the woody rhizome. Pull seedlings when soil is moist.

BLUE **MOUNTAINS**



RANUNCULACEAE

Description

- A prostrate perennial creeping herb from Europe, Asia and Africa, which grows in damp degraded places.
- · Leaves, produced in clusters, are almost round, compound, with 3 deeply indented lobes, often with patchy colour.
- 5 petalled flowers are shiny golden yellow, held above the leaves on long stalks. Flowers mostly spring and summer.
- · Produces small hard seeds. Also reproduces by above-ground stems which root down (stolons) to form new plants.
- The native geranium (similar leaf) has a small pink flower.

Dispersal

Garden waste dumping, spreads by stolons; seeds dispersed by water and in the faeces of horses, cattle and birds.

Impact on Bushland

Spreads rapidly in damp areas and drainage lines which are disturbed and nutrient-rich, displacing native plants.

Alternative Planting

Local native plants: Water Ferns (Blechnum spp.); Kidney Weed (Dichondra repens); Ivy Goodenia (Goodenia hederacea); Native Geranium species; Native Violet (Viola hederacea).

Control

Hand remove (roots are up to 25cm deep); wear gloves as the plant produces an irritant oil. Can



be sprayed, but not near watercourses (pp.42, 45). Control erosion (p.45). Follow up treatment will be needed.

Crofton Weed

Ageratina adenophora

NOXIOUS WEED CLASS 4

Miscanthus

Miscanthus sinensis





ASTERACEAE

POACEAE

Description

- An erect, leafy, many-stemmed herbaceous perennial to 2m, from Central America. Forms dense stands, prefers moist nutrient-rich soil, common in disturbed areas. Poisonous to horses.
- Leaves are opposite, soft and thin, triangular or rhomboid, with a toothed edge. Upper surface dark green, lower surface lighter.
- Flowers profusely through spring and summer, with dense clusters of small white sticky hairy flowers at the ends of the branchlets.
- 10,000 to 100,000 seeds per plant per year: small and light, brown to black, each with a 'parachute' of white hairs.
- Has a taproot and a wide shallow fibrous root system.
- Has a strong smell when bruised, potentially allergenic.

Dispersal

Seed is dispersed by wind and water over long distances. Also moved by vehicles and machinery, in clothing, soil and stockfeed.

Impact on Bushland

Highly invasive, tolerates a wide range of conditions, common on edges of road and bush, along watercourses, creeks and in wetlands. Capable of infesting intact bushland and displacing native plants.

Alternative Planting

Correas (eg Correa reflexa), Daisy Bushes (Olearia elliptica, Olearia myrsinoides), Waxflower (Phylotheca myoporoides).

Mock Orange (Philadelphus spp), May Bush (Spiraea x vanhouttei).

Control

Bag flower and seed heads, hand remove or dig out, taking all roots. Do not leave stems on ground. Follow-up treatment will be required.

BLUE MOUNTAINS

Description

- Miscanthus is a tough upright clumping grass from Asia. Grows rapidly to 2-3m, tolerates most soil types, survives drought. Known by many variety names (eg 'Zebra Grass'), and is promoted as 'water-wise'. All varieties are real or potential bushland weeds. See our website for more information.
- Numerous strap-like densely-packed leaves up to 1-2m long arch from the base of the clump. Edges are rough and slightly rolled under, the mid-vein is prominent.
- Flowers are large, feathery and fan-like, silver to pink, borne on long stems rising above the leaves, summer to autumn.
- Large numbers of fluffy seeds are produced in autumn.

Dispersal

Seeds are wind blown, can travel on tyres, shoes, clothing and in soil. Spreads and regrows from its rhizomes, and from dumping.

Impact on Bushland

Creates dense thickets and extensive infestations that prevent the growth and germination of other plants. Rapidly invades and colonises large areas of bushland after fires, and is a fire risk itself.

Alternative Planting

Red-fruited Saw-sedge (Gahnia sieberiana), Slender Saw-sedge (G. microstachya), Lomandra (L. longifolia), Tussock Grass (Poa labillardieri), Curly Sedge (Caustis flexuosa), Caustis pentandra.

Control

Remove and bag flower and seed heads. Dig out with a mattock, removing all roots and rhizomes. If this not possible, scrape and paint rhizomes (p.45). Follow-up, dealing with seedlings and resprouting.

Montbretia

NOXIOUS WEED CLASS 4

Red Hot Poker

BUSH INVADER

Kniphofia uvaria

Crocosmia x crocosmiiflora





PHOTO: ANNE BOWMAN





ASPHODELACEAE

Description

- Vigorous, perennial bulbous garden hybrid of South African origin, which dies down in autumn after producing annual leaves and flowers. Thrives on soil affected by stormwater runoff.
- · Leaves are bright green, spear-shaped, and appear in spring.
- · Long spikes of small orange tubular flowers appear in summer.
- Each plant bears a string of flattened corms under the ground, up to 14 or more, each capable of producing another plant. Rhizomes and a mass of fine fibrous roots can also form.

Dispersal

Spreads vigorously by corm production, by rhizomes, and perhaps by seed. Corms wash down watercourses to form new infestations. The plant is also dispersed by the movement of soil containing corms, and is frequently dumped on bushland edges.

Impact on Bushland

Competes fiercely with and displaces native creekline plants. Moves rapidly down watercourses into sensitive bushland. The mass of corms in the soil contributes to the breakdown of creek banks, erosion and siltation. Responsible for serious habitat loss.

Alternative Planting

Local Native Water-ferns (*Blechnum* species); Saw-sedges (*Gahnia* sp), other local sedges, such as *Juncus*, *Isolepis*, and *Schoenus* ssp. Jacobean Lily (*Sprekelia formossissima*) 45cm.

Control



Dig deeply to remove all corms. Wipe leaves (p.44) or spray in summer to autumn, using 13ml glyphosate per litre of water.

BLUE MOUNTAINS

Description

- Hardy perennial lily to about 1.5m from southern Africa. Has a thick clumping habit, and will tolerate most conditions. A garden ornamental, currently promoted as 'water-wise'.
- Slightly fleshy narrow leaves to 90cm rise from the base. They
 have a V-shaped profile, and a distinct keel-shaped mid-vein
 on the underside.
- A large torch-like cluster of small drooping flowers, usually of two colours, rises above the foliage on a stout erect stem.
 These flowers produce bird-attracting nectar. Late summer.
- Each small flower produces a capsule containing many seeds.

Dispersal

Seeds are wind blown, can travel on tyres, shoes, clothing and in soil. Clumps vigorously, spreads by and regrows from its rhizomes, and from garden dumping on bushland edges.

Impact on Bushland

Seeks out sensitive and fragile bushland such as swamps, moist forest and creeklines, spreads rapidly, its dense clumps exclude the roots of other plants. Regenerates strongly after fire.

Alternative Planting

Flowers and/or fruit to attract birds - and water-wise: local Banksias, Hakeas, Grevilleas, Flax Lilies (*Dianella* spp), Saw-sedges (*Gahnia* spp), Callistemons.

Most exotic lilies have weed potential. Escallonia macrantha.

Control

Cut and bag flower and seed heads. Dig out with a mattock, removing all roots and rhizomes. Or cut below crown (p.44) and paint top of rhizome (p.43); try weed wiping (p.44). Follow-up seedlings and resprouting.

Seaside Daisy

BUSH **INVADER**

Erigeron karvinskianus

Balloon Vine

BUSH **INVADER**

Cardiospermum grandiflorum



Description

- Low sprawling herbaceous perennial with a woody base, from Central America, common in rockeries and borders. Also called Mexican Daisy.
- · Leaves are light green, slightly hairy, often lobed, and grow in clusters along the stem. Characteristic smell when crushed.
- · Large numbers of small daisy flowers, opening white, ageing to pink, yellow centre. Flowers all year, but mainly in summer.
- Each flower produces many small, light seeds.

Dispersal

Seeds are dispersed by wind and water, stems layer, broken roots and rhizomes regrow. Often sold on garden stalls; often dumped in bushland.

Impact on Bushland

Reproduces and spreads rapidly to form dense mats, can grow in almost any open habitat, including watercourses. Crowds out and displaces ground level plants, creating a virtual monoculture.

Alternative Planting

Local native Rock Daisies (Brachyscome species); Everlasting Daisies (Chrysocephalum, Rhodanthe and Bracteantha spp); Bush Peas (eg Pultenaea scabra); Fringed Heath-myrtle (Micromyrtus ciliata); groundcover Grevilleas (G. laurifolia, G. gaudichaudii). Alpine Phlox (Phlox subulata); Wild Thyme (Thymus serpyllum cvs).

Control

Pull small plants, or dig out larger ones; stems and rhizomes are woody and brittle and break off. Scrape and paint, or cut and paint (see pp.45, 43). Will require follow-up.

BLUE **MOUNTAINS**



SAPINDACEAE

Description

- · Vigorous highly invasive climber from tropical Africa, Asia and America; climbs by means of tendrils to the top of the canopy, blanketing vegetation at all levels.
- · Light green leaves are compound with three sets of three leaflets which are thin, toothed, and softly hairy.
- · Small white flowers are produced from summer to winter.
- · The fruit is a light green thin-walled, papery, inflated capsule resembling a ribbed balloon, containing three black seeds.

Dispersal

Often dumped on bushland edges. The capsules can be carried by wind and float freely on water, dispersing the plant along waterways. Also regrows from root fragments.

Impact on Bushland

Favours gullies, creeklines and the margins of rainforest, grows rapidly into the tops of trees, forms a thick curtain of stems, excludes light, harbours pests and diseases. Weight contributes to canopy collapse and ecosystem destruction.

Alternative Planting

Old Man's Beard (Clematis aristata); Wonga Wonga Vine (Pandorea pandorana); Wombat Berry (Eustrephus latifolius); native Water Vines (Cissus spp.); Yellow Passion-flower (Passiflora herbertiana).

Plumbago (*Plumbago auriculata*) - train as a climber.

Control

Dig out, or treat as for Vines and Scramblers (p.45). Bag capsules. Follow up with seedling removal.



Blue Periwinkle

BUSH INVADER

Cape Ivy

BUSH INVADER

Delairea odorata

Vinca major



APOCYNACEAE

Description

- Spreading perennial groundcover from the Mediterranean. Tough trailing stems contain milky sap, and grow roots where they touch the soil. Tolerates a wide range of conditions.
- · The variegated and small forms are also weedy.
- Pointed oval leaves are dark, tough and shiny, 4-8cm long.
- Flowers are 5 petalled, violet-blue, appearing mainly in spring.
- · Some seed produced. Develops a woody crown.

Dispersal

Often dumped on bushland edges, spreads from root and stem pieces rooting down or washing down watercourses; from dumped soil; possibly also from seed.

Impact on Bushland

Forms a dense mat of vegetation, smothering and excluding native ground species. Opens the habitat to weed invasion by preventing all germination of native ground covers, shrubs and trees.

Alternative Planting

Arthritis Plant, Gotu Kola (Centella asiatica); Matted Bush-pea (Pultenaea pedunculata); Blue Dampiera (Dampiera stricta); Native Violet (Viola hederacea); Creeping Boobialla (Myoporum parvifolium). Convolvulus (C. mauritanica); Wild Thyme (Thymus serpyllum cvs).

Control

Difficult to control. Pull out all stems and dig out all roots. Do not mulch or compost: bag and send to tip. Control erosion (p.45). Cover to exclude light (p.44).





ASTERACEAE

Description

- Vigorous perennial vine from South Africa with succulent twining stems, which has escaped from gardens into moist forest. Grows rapidly, and is probably toxic.
- · Leaves are fleshy and hairless, and lobed rather like English Ivy.
- Flowers are small, densely bunched, yellow, tubular, daisy-like and fragrant, occurring from autumn to spring.
- Produces many tiny seeds, each equipped with a small hairy parachute, like dandelion.

Dispersal

Seeds sail on wind or water, well into good bushland. Often dumped on bushland edges, where it will regrow from stem fragments.

Impact on Bushland

Invades sensitive and fragile bushland, suppressing the growth and germination of native species by carpeting the ground and rooting down at leaf nodes. Also grows into the forest canopy, kills trees and creates light gaps, leading to more weed invasion.

Alternative Planting

Yellow Passion-flower (Passiflora herbertiana); Climbing Guinea Flower (Hibbertia scandens); Morinda (Morinda jasminoides); Sweet Sarsaparilla (Smilax glyciphylla); Wombat Berry (Eustrephus latifolius); Old Man's Beard (Clematis aristata). Madagascar Jasmine (Stephanotis floribunda); Carolina Jessamine (Gelsemium sempervirens).

Control



Hand remove, eg, by raking, removing all stems. Cut climbing stems. Use herbicide on cut stumps (p.43), scrape (p.45), or spray (p.44).

English Ivy

BUSH INVADER Japanese Honeysuckle

BUSH INVADER

Lonicera japonica



ARALIACEAE

Description

- A dense, evergreen creeper and climber from Europe, hardy, vigorous, perennial, and woody. Clings by means of stem roots and has distinct juvenile and adult forms of growth. All parts of this plant are poisonous.
- Leaves are dark glossy green and tough. Juvenile leaves are lobed, mature leaves are more rounded.
- When English Ivy reaches the top of its support it produces mature bushy growth, stops climbing and spreading, then flowers and fruits.
- Clusters of small greenish-yellow flowers are followed by round succulent blue-black berries, autumn and winter.

Dispersal

Birds eat the berries and excrete the seeds, often in bushland. Also spreads vegetatively, by rooting at leaf nodes.

Impact on Bushland

Blankets the ground in moist sheltered areas, prevents seed germination, excludes light, harbours disease, damages and brings down mature trees, changes the ecosystem.

Alternative Planting

Old Man's Beard (*Clematis aristata*); Twining Purple Pea (*Hardenbergia violacea* LM); Milk Vines (*Marsdenia suaveolens*, *M. flavescens*, *M. rostrata*; Native Violet (*Viola hederacea*).

Control

Do not pull off trees, as serious damage to bark may result. Dig out, or poison major roots (see pp.43-45), cut through the smaller roots from leaf nodes. Scrape and paint stems (p.45).







CAPRIFOLIACEAE

Description

- Vigorous, fast growing evergreen climber from China and Japan, producing a tangle of twining woody stems.
- Juvenile leaves are lobed; adult leaves are more or less oval and in opposite pairs on the stems.
- Flowers are tube-like, fragrant and nectar filled, ageing from white to yellow, and profuse throughout summer.
- Small shiny black berries follow the flowers in autumn.

Dispersal

Fruit eating birds spread the seeds, stems root down where they touch the ground, and roots make new shoots. This plant is also often dumped on bushland and roadside edges.

Impact on Bushland

Rapidly forms a complete blanket over shrubs and low canopy trees, blocking light, breaking branches, harbouring disease, leading to plant and habitat loss and other weed invasions.

Alternative Planting

Old Man's Beard (*Clematis aristata*); Dusky Coral Pea (*Kennedia rubicunda* LM); Twining Purple Pea (*Hardenbergia violacea* LM); Wonga Wonga Vine (*Pandorea pandorana* LM).

Banksia Rose (*Rosa banksiae*). See also suggestions for Cape Ivy (p.35), and Madeira Vine (p.38).

Control

Dig or rip out, removing as much root as possible; cut and paint if single stem, or scrape and paint all major stems (pp.43, 45). Best not to pull out of trees and shrubs because of the damage likely to be caused.



Madeira Vine

Anredera cordifolia

BUSH INVADER

Morning Glory

BUSH INVADER

Ipomoea indica



BASELLACEAE



- Aggressive, rampant twining perennial climber from South America, which races to the canopy, curtaining all vegetation with its thick rope-like stems and dense foliage.
- Leaves are heart-shaped, hairless, shiny, thick and fleshy.
- Small tubular flowers, greenish-cream to white, droop in long fragrant sprays ('lambs tails') through summer and autumn.
- Stems bear aerial tubers which form clusters high in the vine; tubers grow below ground on rhizomes (underground stems).

Dispersal

Grows from both kinds of tuber and from pieces of rhizome. Rarely produces seed. Often dumped on bushland edges. Both tubers and rhizomes can be washed down waterways.

Impact on Bushland

Invades moist forest and rainforest edges, envelopes the canopy, restricts light, encourages disease, prevents germination of native plants. Weight can break down trees. Helps to destroy rainforest.

Alternative Planting

Five-leaf Water Vine (*Cissus hypoglauca*); Twining Purple Pea (*Hardenbergia violacea* LM); Wonga Wonga Vine (*Pandorea pandorana* LM); Dusky Coral Pea (*Kennedia rubicunda*); Old Man's Beard (*Clematis aristata*); Wombat Berry (*Eustrephus latifolius*). Climbing Hydrangea (*Hydrangea anomala* subsp petiolaris).

Control



A long, difficult process. Spread tarps, pull down vine or knock down tubers. Bag them, send to tip. Or scrape and paint stems (p.45) without cutting.

BLUE MOUNTAINS



CONVOLVULACEAE

Description

- Vigorous fast-growing perennial twining climber from tropical America, growing to the top of the tree canopy and forming a dense blanket of foliage over all vegetation.
- Leaves are large and light green with a heart-shaped base, and usually have three lobes. Both leaves and stems are hairy.
- Large trumpet-shaped violet-blue flowers, fading to pink, are produced throughout most of the year.
- Seed rarely if ever set in Australia. Spreads vegetatively.

Dispersal

Spreads from dumping on bushland edges. Stem fragments root down to form new plants where they contact the ground.

Impact on Bushland

Invades fragile creeklines and rainforest edges, growing rapidly to the canopy, blocking light, reducing photosynthesis, encouraging disease, preventing germination, breaking down trees. This vine and several others described in this book are in the forefront of ecosystem destruction.

Alternative Planting

Wonga Wonga Vine (*Pandorea pandorana*); Old Man's Beard (*Clematis aristata*, *C. glycinoides*); Dusky Coral Pea (*Kennedia rubicunda*); Wombat Berry (*Eustrephus latifolius*).

Madagascar Jasmine (Stephanotis floribunda), and see pp.35, 38.

Control

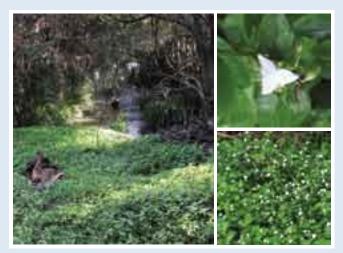
Scrape, paint and dig, as described for Vines and Scramblers (p.45). Pulling out of trees and shrubs may cause considerable damage.



White Jasmine

BUSH INVADER

Tradescantia fluminensis Jasminum polyanthum



COMMELINACEAE

Description

- A creeping, rapid-growing soft herbaceous plant from South America, favouring damp, shady nutrient-enriched areas. Also known as Wandering Jew.
- Stems are long, brittle, succulent and trailing, curving upwards at the tips; fine shallow roots grow at the leaf nodes.
- Leaves are shiny mid-green, elliptical with a point, smooth and slightly fleshy, sheathed where they join the stem. Can cause a severe contact allergy in dogs.
- Small white flowers with 3 triangular petals, spring to summer.
- A native plant look-alike, Scurvy Weed (Commelina cyanea), is distinguished by its blue flowers and fleshy roots.

Dispersal

Dumping of garden waste; stem fragments root readily and can be washed down waterways or spread in mud from vehicles.

Impact on Bushland

Rapidly takes over the ground layer in gullies and temporary watercourses, forming a thick blanket of leaves that exclude light and warmth. Aggressively smothers low plants and seedlings, cools the soil, prevents native plant germination. Highly invasive.

Alternative Planting

Arthritis Plant, Gotu Kola (Centella asiatica); Kidney Weed (Dichondra repens); Native Violet (Viola hederacea).

Wild Thyme (Thymus serpyllum cvs); Alpine Phlox (Phlox subulata).

Control

Pull up, rake, or knife out; remove all stem pieces. Bag and send to tip, or give to chooks. Rigorous follow up weeding will be required. Follow the principles on p.48.





OLEACEAE

Description

- Vigorous fast-growing evergreen twining climber from China, with tough wiry stems.
- Leaves are compound with 5 to 7 shiny leathery leaflets.
- Clusters of highly scented allergenic tubular flowers are produced in spring, pink in bud, opening white and star-like.
- Stems travel long distances across the ground, frequently rooting down at leaf nodes (layering) to form new plants.

Dispersal

Seeds are rarely produced; the plant spreads mainly vegetatively by layering, and suckering from the roots. Often dumped.

Impact on Bushland

Climbs rapidly into the tree canopy and covers vegetation at all levels, blocking light and restricting growth. Weight may bring down trees. Often grows with other vines. Potentially a serious weed in rainforests and along creeklines.

Alternative Planting

Wonga Wonga Vine (*Pandorea pandorana* LM); Purple Twining Pea (*Hardenbergia violacea* LM); Old Man's Beard (*Clematis aristata*); Dusky Coral Pea (*Kennedia rubicunda* LM); Wombat Berry (*Eustrephus latifolius*); Yellow Passion-flower (*Passiflora herbertiana*).

Madagascar Jasmine (*Stephanotis floribunda*); Carolina Jessamine (*Gelsemium sempervirens*).

Control

As for Vines and Scramblers (p.45), or remove complete root system. Pulling out of trees and shrubs may cause damage.



Controlling Weeds 1

Using Herbicides

Many of the weed control techniques suggested on this and the following pages involve the use of herbicides. Herbicides are poisons, and should be handled with the greatest respect. They can be absorbed very easily through the skin, by breathing the vapours, and by ingestion (eating or drinking).

By law, herbicides must be used strictly in accordance with the manufacturer's label. They should be kept well out of the reach of children, preferably secured in a locked cabinet. They should always be stored in the original labelled container.

USE OF HERBICIDE: SAFETY PRECAUTIONS

- Read the label before opening the container and follow the instructions exactly.
- Wear protective clothing: long sleeves, long pants, sturdy shoes, gloves, eye protection.
- Always wear waterproof gloves.
 A respirator is advised when mixing or pouring the liquid.
- Do not eat, drink or smoke while using herbicide. Keep children and pets away.
- Wash skin and equipment afterwards.
 Wash contaminated clothing separately.
- Clean up any spills with large amounts of water; shovel up contaminated soil, dispose of it at the tip.



Bushcare Officers take no risks

Types of Herbicide

There are two widely used herbicides licensed for use at home: **Glyphosate**, sold under various trade names, including Roundup® and Zero® (which have different concentrations), and **Triclopyr**, sold as Tree, Blackberry and Woody Weed Killer (etc).

How Herbicides Work

- Glyphosate is a systemic, non-selective herbicide. It inhibits
 the action of an enzyme, preventing the production of an
 amino acid essential to plant life and growth. It must be
 applied to green leaves, or directly to the plant's sapwood,
 which lies under the bark.
- Triclopyr is a selective systemic herbicide for woody and broadleaf plants. It is a growth inhibitor which moves to the plant's roots, stops growth, and eventually leads to the death of the plant. Triclopyr can be applied to green leaves and to bark.

Herbicides, Waterways, and Steep Land

Some of chemicals which are added to herbicides are not safe to use near waterways. They have the potential to seriously affect the quality of aquatic ecosystems. If you need to remove weeds, particularly trees, within 20m of any kind of watercourse, even a drain that runs only when it is raining, you must seek advice and assistance from Council's Environmental Management Section (see Contacts, back cover).

This also applies to the removal of trees from very steep land.

Controlling Weeds 2

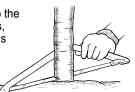
Control of Woody Weeds

CUT AND PAINT

A method for all weeds on pages with this background colour.

Suitable for small to medium sized woody shrubs up to 10cm in diameter (or larger if using a chain saw). See below for trees.

- · Clear around the base of the plant.
- Cut the stem horizontally as close to the ground as possible, using secateurs, loppers, or a saw. Make sure there is no soil on the cut.
- Apply undiluted herbicide to the cut stem immediately. Squeeze, not squirt, if using an applicator.
- · Ensure there is no runoff of poison.
- · Use as little herbicide as possible.



Clear ground and cut low: loppers & secateurs give the



tips

Apply the herbicide within seconds of cutting.

- Make cuts horizontal to prevent herbicide from running off the stump. Sharp angled cuts are hazardous.
- Apply herbicide immediately after cutting within a few seconds, before plant cells close and translocation of herbicide ceases.
- If plants resprout, cut and paint the shoots after sufficient regrowth has occurred.
- Stem scraping (p.45) can be very effective on certain woody weeds, eg Japanese Honeysuckle, Blackberry, vines and rhizomatous plants.

STEM INJECTION

A method for weedy trees and large shrubs

- Use a cordless drill (9mm bit), hammer and chisel, or brace and bit.
- Below any branches, drill or chisel holes round the base of the tree, into the sapwood, angled down at 45°, and at 5cm intervals.
- Make the holes about 40mm deep.
- Within a few seconds of drilling each hole, fill it with undiluted herbicide.
- Use this method only when falling branches, as the tree dies, will not be a safety hazard.



Controlling Weeds 3

HAND REMOVAL OF WEEDS

Suitable for seedlings, herbaceous weeds, many grasses:

- Before starting work, remove and bag seeds and fruit, and place in bin.
- If the weed has a tap root, push a narrow trowel or long knife deep into the ground beside the root. Loosen the soil. Work round the root, then work the plant out gently.
- Many plants which will not regrow from their roots (eg many grasses) can be crowned: see diagram right. Hold leaves and stems together, and use a knife to cut through all the roots below the 'crown'.
- Plants with bulbs, corms or tubers (eg Montbretia, Madeira Vine) may need deep digging to ensure complete removal. Bag bulbs, corms and tubers and send to the tip; do not compost.
- · See Guard against erosion on p.43.

STEM & LEAF WIPING

This method is suitable for plants with bulbs, tubers, corms or rhizomes, eg Montbretia.

- First read p.42 about using herbicides, and the tips on p.43.
- · Remove and bag any seed or fruit.
- Using a weed wiper, start at the base and wipe all the stems and/or leaves with a dilute mix of herbicide.
- If leaves have soil on them, wipers must be regularly washed out.





leaf wiping

Take great care when wiping: do not allow the herbicide to touch your skin or to run off into the soil, or to get on a non-target plant.



There are many control methods which are specific to certain weeds - eg, large infestations where spraying, or covering to exclude light may be options.

Contact BMCC Bushcare (4780 5528) for up to date techniques.

When to Treat with Herbicide

- Apply herbicide when the plant is actively growing.
- Do not apply herbicide when the plant is under stress: extreme heat or cold, drought, waterlogging, or disease.
- · Choose early morning or late afternoon in summer.
- Do not apply when wet or windy weather is anticipated.
- For many plants, especially bulbous plants and those which sucker, the best time is from summer to autumn.
- · Treat deciduous plants in late spring or summer, when in full leaf.

Controlling Weeds 4

Control of Groundcovers, Vines & Scramblers SCRAPE AND PAINT

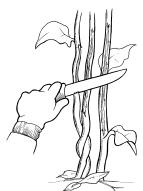
This method is suitable for vines and scramblers with woody stems.

- First read page 42 about using herbicides, and the tips on p.43.
- Using a knife, and starting from the base, scrape 20 to 100cm of leafy stem to expose the sapwood below the bark.
- Within seconds, apply herbicide* to the scraped area (but also see By Law, below).



tips

- Do not ringbark the stem: scrape about one third of the diameter.
- Stems larger than 1cm in diameter can be scraped on both sides.
- Vine curtains can be cut at chest level, then again at about 30cm.
 Scrape or cut and paint these stumps.
- Blackberry can be cut back to 1m if there are plenty of leaves; then scrape and paint the cut stems.
- Pulling vines (especially twiners) out of trees and shrubs may do a lot of damage. They can be left hanging to die.



scrape and paint

By Law

Herbicides must be used according to the label, or according to National Registration Authority Permits.

If the plant on which you wish to use the herbicide is not named on the label, contact Council for permit information.

THE DIG OPTION

On these pages you will find advice on using herbicides to control weedy plants: often this causes minimal disturbance (p.48) and less germination of seedlings.

Seedlings and small plants may be pulled by hand when the soil is moist. See p.44.

And, if you have the energy and the space in your garden, you can often take the dig option, making absolutely sure that you remove all the parts of the plant from which it can regrow.

Guard against erosion

Try to stage weed removal. Large areas of exposed soil are an open invitation to weed invasion. They may also cause soils to erode, carrying weed seed into the bush. Mulch bare soil, and stabilise it by planting bush-friendly plants into it as soon as possible.



We're Bringing

'Bringing back the Bush' is the title of the bookwritten by Joan Bradley about the practices she and her sister Eileen developed as they set about restoring weed-invaded bushland in a reserve in Mosman in the 1960s. These two remarkable women laid down a set of principles of bush regeneration which still form the framework for the rehabilitation of degraded bushland today. It is known as the Bradley Method.

Principles of Bush Regeneration

- 1. Always work from areas with good native plants towards weedinfested areas: where weeds are minimal, weed seeds are minimal; where the number of native plants is the maximum, so is the soil seed bank of native plants. As you work towards more degraded areas, the native plant seeds follow you into the areas you have weeded.
- 2. Create minimal disturbance: remove weeds by hand, mulch the ground to suppress regrowth, carefully replace soil in its original layers. Weeds are encouraged by disturbance of the ground laver.
- 3. Let the rate of regeneration of native plants determine the rate of weed removal: too rapid clearing will lead to massive germination of weeds, and much of your time has to be spent in re-weeding the site to give regenerating natives a chance.

Modern bush regenerators have added some techniques to the Bradley Method, including

- the judicious and minimal use of herbicides, which results in less soil disturbance than hand removal of roots;
- less dependence on mulching, which may discourage native plant regeneration: many natives need bare soil and light to
- the planting of local native species where the bush no longer has the resilience to regenerate naturally, or where soil erosion is likely to occur.



Popes Glen Blackheath:

Popes Glen Bushcare Group is removing a dense infestation of Japanese Honeysuckle and English Ivy.

Four years later:

Lush growth of native plants. The bush has come back: nothing was planted!

Back the Bush

The Blue Mountains Bushcare Movement

Every month, from Lapstone to Mt Wilson, more than 50 groups of bushcare volunteers, of all ages and backgrounds, troop out to their local patch of bushland and spend a few hours together helping to reverse the damage done to the environment by invasive weeds and stormwater runoff (pp.6-7). They do this by assessing the existing vegetation, planning carefully, removing weeds, encouraging the bush to expand, consolidating the progress made, then moving into new areas. They use the principles of bush regeneration (opposite) to guide their work.

Bushcare Group PHOTO: JASMINE PAYGET

South Lawson Park

The Bushcare Movement fosters a strong sense of community responsibility for the natural environment. The first group of volunteers commenced work in 1989.

Since 1992 these community efforts have been supported by Blue Mountains City Council, which now provides Bushcare Officers, materials, and onsite training. But Bushcare remains a community-driven movement: for every hour Council puts into the program, the community puts in more than three.



Steps constructed by Minnehaĥa Falls Landcare Group, North Katoomba

Community involvement encourages long-term, consistent projects, and high quality care and maintenance for bushland reserves. Many groups have successfully applied for grants for large works which are beyond their capacity as volunteers. Grants have brought muchneeded money and work into the Mountains. They have funded such projects as tracks, steps and boardwalks, bridges, restoration of creeklines, drainage structures and wetlands, interpretive signs, professional bush regeneration teams, and environmental education.



Trackwork, bridges and creekline restoration, Else Mitchell Park

'Why do I do it?' replied one volunteer. 'Because I have to.' If you care about the bush, you have to get out there and help. You can't just ignore it. You have to do somethina.'

Nathan, 7, right: 'I like weeding days We help to make the bush better. It's fun.



exercise, and help save our unique Australian bush.' said another volunteer Bushcarer. 'All the time vou're learning about plants and animals. And it's not hard work either: Bushcare days are great social and family occasions, when you can meet and talk to interesting local people.

'It's great to get outside in the fresh air, get a bit of

For more information about Blue Mountains Bushcare, contact Council's Bushcare Coordinator (see Contacts)

Other Blue Mountains Bush Invaders

The weeds described in this book are by no means the only plants that threaten our Blue Mountains bushland. More are listed below. Contact Council or the Bushcare Network for a comprehensive list, and for suggestions for alternative planting. Go bush-friendly!

Woody Weeds

African Olive Olea europea ssp africana Berberis Berberis spp Bird Cherry Prunus padus Robinia pseudoacacia **Black Locust** Black Willow Salix nigra Chrysanthemoides Boneseed monilifera ssp. monilifera Box Elder Acer negundo Cassia Senna pendula var. glabrata Cockscomb Coral Tree Erythrina crista-galli Evergreen Dogwood Cornus capitata Giant Reed Arundo donax Firethorn Pyracantha spp. Crataegus monogyna Hawthorn Gleditsia triacanthos Honey Locust Mickey Mouse Plant Ochna serrulata Poplar Populus spp White Poplar Populus alba Qld Silver Wattle Acacia podalyriifolia Rhododendron Rhododendron ponticum Sycamore Acer pseudoplatanus Sykes's Coral Tree Erythrina x sykesii Tree Lucerne Chamaecytisus palmensis Ailanthus altissima Tree of Heaven



Climbers & Groundcovers

Black-eyed Susan Thunbergia alata
Bridal Veil Creeper Asparagus asparagoides
Climbing Asparagus Asparagus plumosis
Fishbone Fern Nephrolepis cordifolia
Japanese Knotweed Persicaria capitata
Moth Vine Araujia sericiflora
Turkey Rhubarb Acetosa sagittata
White Clover Trifolium repens



Herbaceous Weeds

Asparagus Fern

Protasparagus aethiopicus Canna Lily Canna indica Fennel Foeniculum vulgare Formosan Lilv Lilium formosanum Ginger Lily Hedichium gardnerianum Mistflower Ageratina riparia Mother of Millions Bryophyllum delagoense Ox-eye Daisy Leucanthemum vulgare Pampas Grass Cortaderia selloana Paterson's Curse Echium spp. Peruvian Lily Alstroemeria aurea St John's Wort Hypericum perforatum Spider Plant Chlorophytum comosum Tansy Tanicetum vulgare Tutsan Hypericum androsaemum Watsonia Watsonia meriana cv. bulbillifera Umbrella Sedge Cyperus eragrostis



Common Turf Grasses

Browntop Bent Agrostis capillaris
Couch Cynadon dactylon
Kikuyu Pennisetum clandestinum
Rye Grass Lolium species



Noxious Weeds

The term 'Noxious Weed' is strictly a legal term, as opposed to 'Environmental Weed' (or 'Bush Invader'), which is any plant that invades natural systems.

The Noxious Weeds Act of 1993 declares and classifies plants which are a danger to human health, serious economic pests, and invaders of natural systems.

Owners and occupiers of property in the City of Blue Mountains are obliged to comply with this Act.

Control Classes

There are 5 Control Classes described under the Act. For a complete list of all weeds declared Noxious in the Blue Mountains, and for complete descriptions of all Control Classes, go to our website www.weedsbluemountains.org.au.

A noxious weed that is classified as a Class 1, 2 or 5 noxious weed is referred to in this Act as a **notifiable weed**.

Noxious weeds described in this booklet are in Classes 3, 4 and 5.

Class 3 Regionally Controlled Weeds

Control objective

Reduce the area and the impact of those plants in parts of NSW.

Control action

The plant must be fully and continuously suppressed and destroyed.

Class 4 Locally Controlled Weeds

Control objective

Minimise the negative impact of those plants on the economy, community or environment of NSW.

Control action

The growth and spread of the plant must be controlled according to the measures specified in a mamagement plan published by the local control authority, and the plant may not be sold, propagated or knowingly distributed.

BMCC Weed Control Plans for Class 4 weeds are on our website.

Class 5 Restricted Plants

Control objectives

Prevent the introduction of those plants into NSW, the spread of those plants within NSW or from NSW to another jurisdiction.

Control action

The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with.



