Alien Invasive Plants

OF NATURE'S VALLEY

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In support of conservation

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REVISED VERSION OF

NATURE'S VALLEY INVASIVE PLANTS

NEW TITLE:

Alien Invasive Plants

OF NATURE'S VALLEY

COMPILED AND EDITED BY

BRITTANY ARENDSE

AND

CHARLES BREEN

2018

Alien Invasive Plants of Nature's Valley

CONTRIBUTING TO THE NATIONAL ENDEAVOUR

Invasive Alien Plants cost South Africans tens of billions of rand annually in lost agricultural productivity and resources spent on management (https://www.sanbi.org/information-resources/infobases/invasive-alien-plant-alert). We all need to play our part in controlling the spread of alien invasive plants.

Introduction

Nature's Valley is situated between priceless indigenous forest and coastal bush. As landowners and gardeners we should be sensitive to the fact that any invasive plants which we allow to prosper in the Valley can spread into the surrounding natural areas. It was with this concern in mind that at the time the village was established, the Company included the following clause in all title deeds:

"No trees known as Port Jackson, wattle trees, or any plant, tree or shrub deemed by the Company to be noxious or objectionable, shall be planted, cultivated or allowed to flower on this erf, without the written consent if the Company first had and obtained".

Unfortunately when Nature's Valley was established as a residential area, very few species of indigenous trees were available from commercial nurseries. Many non-indigenous trees were planted, some of which are now large and beautiful trees but have proved to be invasive. Without control, the invasive trees and other species that have been nurtured in the Valley can spread into the forest and replace the yellowwood, stinkwood, ironwood and milkwood and other species that have such strong historical significance in the Tsitsikamma.

Alien species have arrived in South Africa without the insects and other agents that kept them in check in their lands of origin. It is up to each one of us to help control the spread of these species and reduce the burden on our economy.

Part 1 of this booklet enables readers to understand their legal obligation in respect of the National Environmental Management: Biodiversity Act, 2014 (Act No. 10 Of 2004); Part2 is an aid to identifying problem plants in Nature's Valley; and Part 3 provides guidance on the control of these problem plants.

ACKNOWLEDGMENTS

This booklet revises Nature's Valley Invasive Plants written by Maaike Murphy and the Nature's Valley Trust. It draws illustrations and text from Invasive Species South Africa (www.invasives.org.za) and the book by Lesley Hendersen (2001) covering alien weeds and invasive plants in South Africa. Philip Ivey, formerly of the South African Biodiversity Institute, updated names and categories. Kay Montgomery (Environmental Communications project: Invasive Species South Africa), gave insightful feedback on early drafts which assisted in shaping the end product in to a factually correct, simple but useful alien guide for Nature's Valley.

Part 1: Legal Obligations

Alien Invasive species are under control of the National Environmental Management: Biodiversity Act (NEMBA), 2004. Act no.10 of 2014 covers Alien Invasive Species regulations which became law on 1 October 2014. These regulations have listed species of threat into four different categories for management or control.

Category 1a

Invasive species requiring compulsory control. Remove and destroy. Any specimens of Category 1a listed species need, by law, to be eradicated from the environment. No permits will be issued.

Category 1b

Invasive species requiring compulsory control as part of an invasive species control programme. Remove and destroy. These plants are deemed to have such a high invasive potential that infestations can qualify to be placed under a government sponsored invasive species management programme. No permits will be issued.

Category 2

Invasive species regulated by area. A Category 2 permit is required to import, possess, grow, breed, move, sell, buy or accept as a gift any plants listed as Category 2 plants. No permits will be issued for Category 2 plants to exist in riparian zones.

Category 3

Invasive species may remain in prescribed areas or provinces. Further planting, propagation or trade is however prohibited.

What does this mean?

In short, all Category 1 aliens must be removed; if not, you may be liable for a fine. Species in Category 1b are extremely invasive and governmental programmes have been put in place to assist with removal. You may not trade or plant any Category 1 species and you will not get a permit to do so.
Category 2 aliens are potentially invasive therefore a permit is needed to carry out any restricted activities.
Category 3 aliens refers to previously existing plantation. These species may remain in existing areas but no further planting, propagation or trade are allowed. Additionally, if these species are on your property, you are not obliged to remove them but again no planting, propagation or trade is allowed.

How do Aliens affect your property?

“A property that contains invasive species is a liability to the buyer. The NEMBA regulations state that the seller of any immovable property must, prior to the relevant sale agreement, notify the purchaser of the property in writing of the presence of listed invasive species on that property.” - www.invasives.org.za

Permits needed

Permits are required to carry out certain restricted activities for Category 2 alien invasive plants.

Permits may be downloaded from: www.invasives.org.za
Cost applies per species:
Import into the Republic - R200.
All restricted activities - R100.
Renewal of permit - R50.
Appeals - R50.
Permit applications can be emailed to AISpermits@environment.gov.za

Part 2: Identifying Alien Invasive Plants

A number of plants have been singled out as being a problem in Nature's Valley largely due to their invasive habits. The list of these plants is not comprehensive and any comments or suggested additions to this list will be welcomed.

Invasive Alien Plants (IAPs) are widely considered as a major threat to biodiversity, human livelihoods and economic development. IAPs cost South Africans tens of billions of rand annually in lost agricultural productivity and resources spent on management.

Which plants have to be controlled?
The actions required with regard to any plant species depend on the category in which the plant appears in the amended regulations, and might differ from province to province. In certain cases, special conditions were added that apply only to that specific species. Please see the Governmental Gazette for 29 July 2016 for complete list of invasive species. (www.invasives.org.za)

Symbols used:

Registered herbicide available.

Plant parts are poisonous.

Alien Invasive Plants of Nature's Valley

Acacia baileyana

F. MEULL.

Bailey's wattle | Bailey-se-wattel

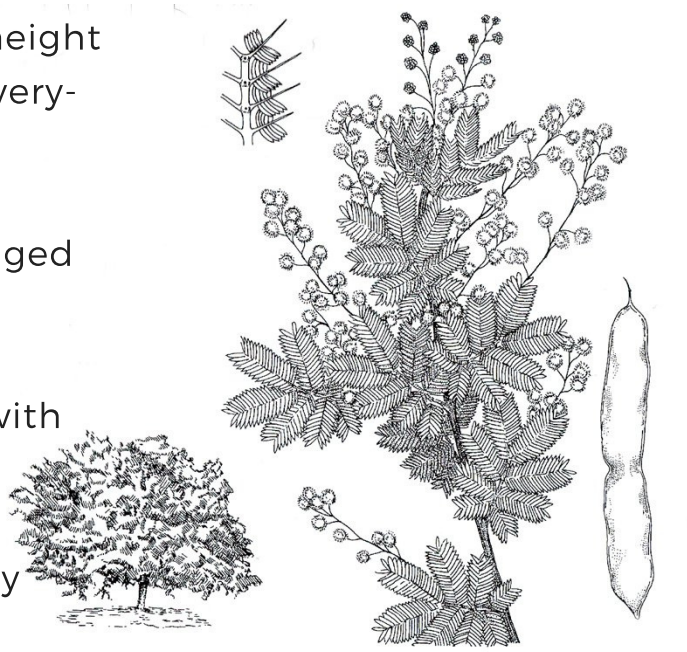
Category 3

Small evergreen tree, growing 3-6m. in height with branchlets covered in greyish or silvery-blue foliage.

Leaves 20-50mm. long and spirally arranged around branchlets.

Flowers bright yellow, globular shaped with showy sprays.

Fruits greyish-brown pods, approximately 100mm. in length.



Competes with indigenous species in forested areas and along river banks, and has the potential to replace these species.

J F M A M J **J** **A** **S** O N D

Indigenous Alternatives

Sweet thorn (*Vachellia karroo*)
Common hook thorn (*Senegalia caffra*)
Weeping wattle (*Peltophorum africanum*)
Blossom tree (*Virgilia oroboides*)

Acacia elata

A. CUNN EX BENTH.

Pepper tree Wattle | Peperboomwattel

Category 1b

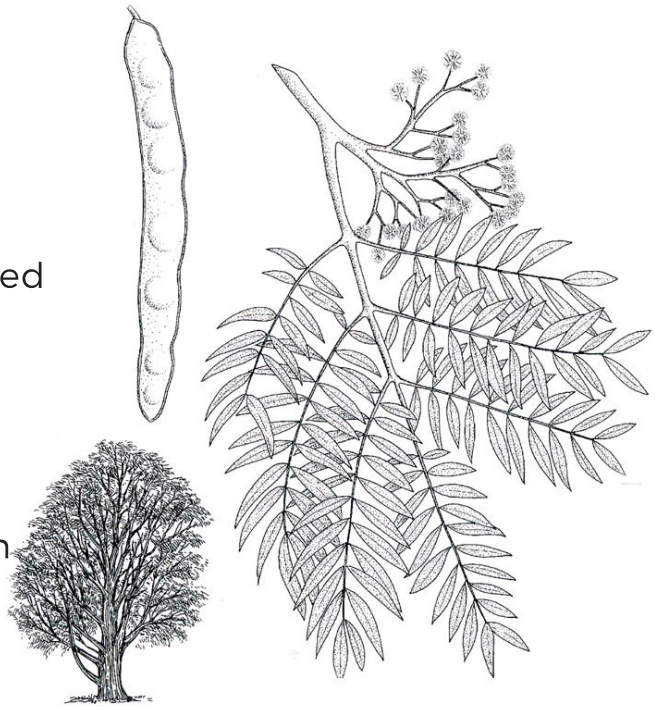
Large oval-shaped evergreen tree up to 20m. high.

Leaves dark green, glossy.

Flowers pale yellow or cream, globe-shaped flowerheads in large sprays.

Seed pods 4-17cm. long.

Invades fynbos, forest clearings and urban open spaces.



J F M A M J J A S **O N D**

Indigenous Alternatives

Wild plum (*Harpephyllum caffrum*)
Wild peach (*Kiggelaria africana*)

Acacia longifolia

(ANDREWS) WILLD.

Long-leaved wattle | Langblaarwattel

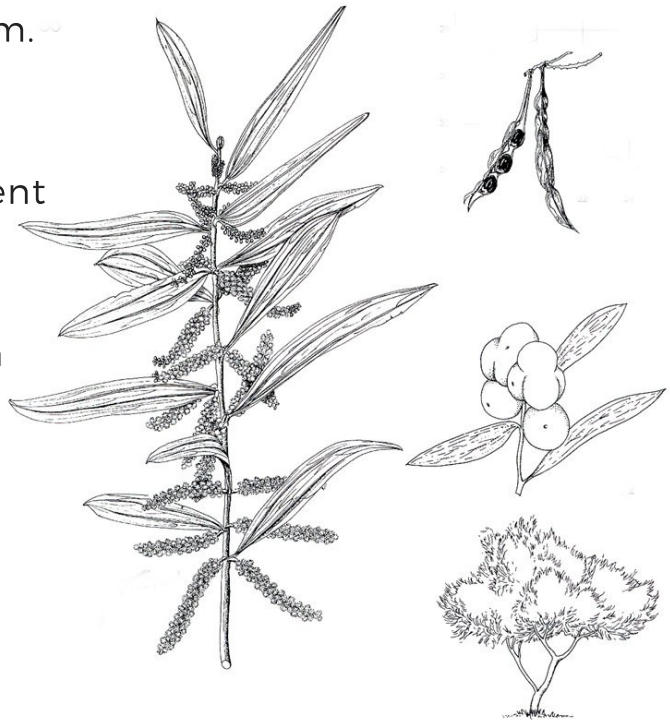
Category 1b

Evergreen shrub or spreading tree, 2-6m. high.

Leaves long, bright green with prominent longitudinal veins.

Flowers bright yellow and cylindrical in shape, 50 x 7mm.

Introduced for dune reclamation.



J F M A M J **J** **A** **S** O N D

Indigenous alternatives

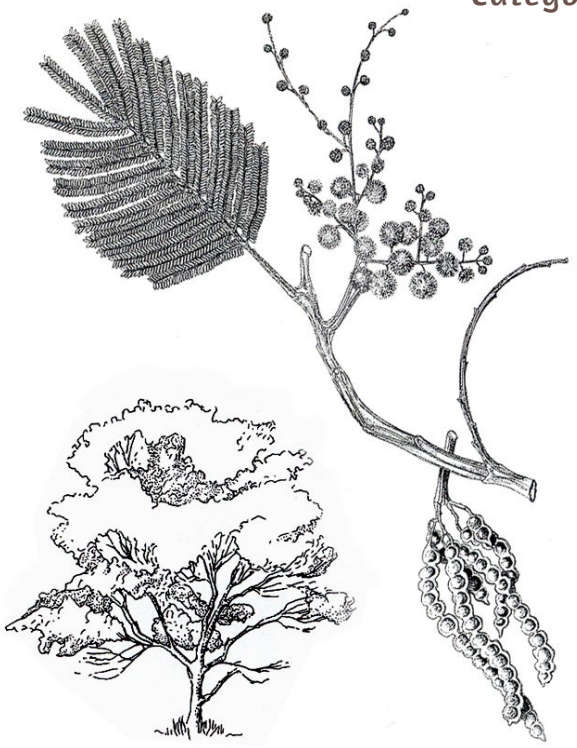
Sand olive (*Dodonaea viscosa* var. *angustifolia*)
Bush guarri (*Euclea racemosa* subsp. *racemosa*)
Real yellowwood (*Podocarpus latifolius*)
Duiker-berry (*Sclerocroton integerrimus*)

Acacia mearnsii

DE WILLD.

Black wattle | Swartwattel

Category 2



Evergreen tree growing 5-10m. high.

Leaves dark olive-green, finely hairy.

Flowers are small pale yellow to cream, globe-shaped in large, fragrant sprays.

Pods dark brown, finely haired.

Invades grasslands.

J F M A M J J **A** **S** O N D

Indigenous alternatives

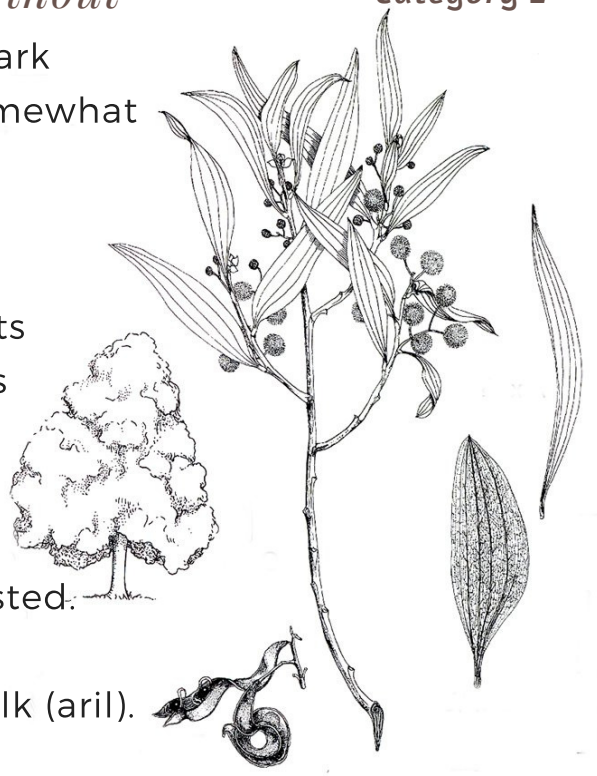
Weeping wattle (*Peltophorum africanum*)
Hook thorn acacia (*Acacia caffra*)
Karee (*Searsia lancea*)
Mountain karee (*Searsia leptodictya*)

Acacia melanoxylon

R. BR.

Australian blackwood | Australiese swarthout

Category 2



Trees (up to 20m. high); bark on older trunks dark greyish-black in colour, deeply fissured and somewhat scaly.

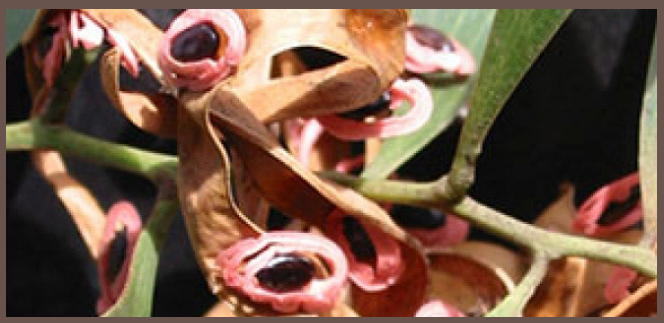
Younger branches ribbed, angular, or flattened towards their tips, greenish in colour; branchlets usually mostly hairless, stems of younger plants sometimes more obviously hairy.

Flowers pale yellow in globular flower heads.
Pods reddish-brown, narrower than leaves, twisted.

Seeds almost encircled by pinkish-red seed stalk (aril).

Introduced as source of timber.

J F M A M J J **A** **S** O N D



Indigenous alternatives

Sand olive (*Dodonaea viscosa* var. *angustifolia*)
Bush guarri (*Euclea racemosa* subsp. *racemosa*)
Real yellowwood (*Podocarpus latifolius*)
Duiker-berry (*Sclerocroton integerrimus*)

Acacia podalyriifolia

A. CUNN. EX G. DON

Pearl acacia | Vaalmimosa

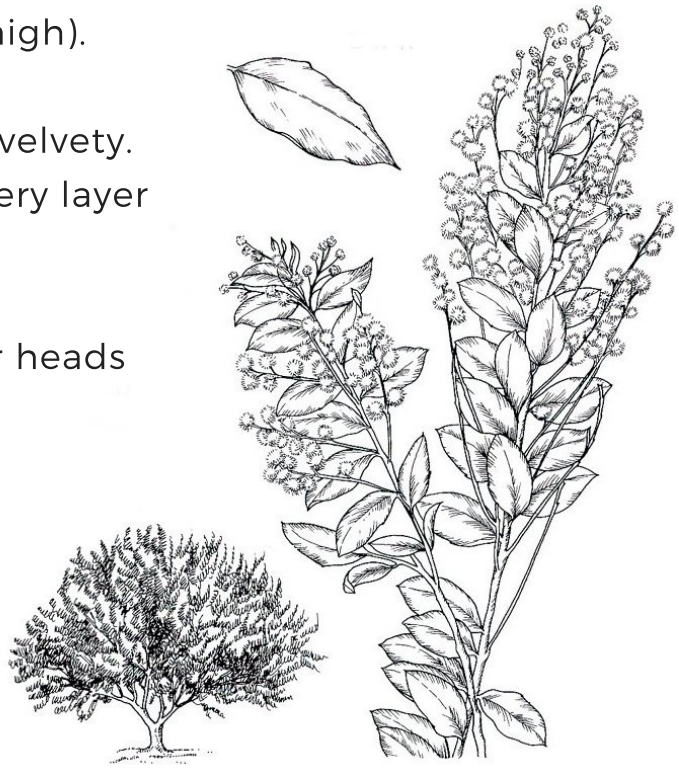
Category 1b

Small evergreen shrub or tree (3-6m. high).

Leaves silvery-grey to dull green, oval, velvety. New growth covered in greyish, powdery layer and densely velvety hairs.

Flowers bright yellow, spherical flower heads in long, showy sprays.

Seed pods greyish-brown, velvety, 30-80 x 15-20mm. wide.



J F M A M **J J A** S O N D

Indigenous alternatives

False olive (*Buddleja saligna*)

Ageratum conyzoides

L.

Invading argeratum | Bokkruid

Category 1b

Annual with stems green, purplish or reddish; 30-60cm. high.

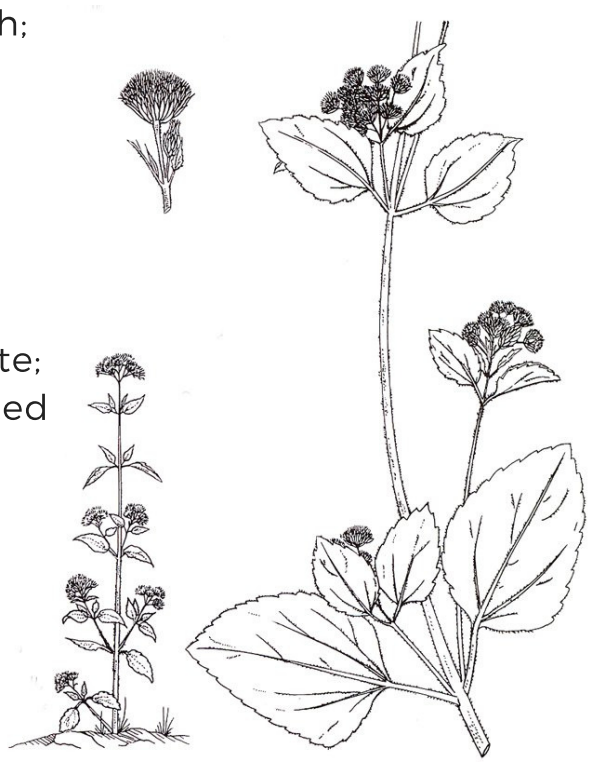
Leaves bright green.

Annual plant with fluffy flower heads.

Flowerheads fluffy, blue, mauve, pink or white; 4-5mm. diameter with slender, barely exserted styles.

Fruit brown, one-seeded.

This poisonous plant was introduced for ornamental reasons.



J F M A M J J A S O N D

Indigenous alternatives

Natal blue haze (*Tetraselago natalensis*)

Ageratum houstonianum

MILL.

Mexican ageratum | Mexikaanse ageratum

Category 1b

Stems green, purplish or reddish; 30-60cm. high.

Leaves bright green, soft, hairy and slightly aromatic.

Flowers mauve, blue, pinkish and white, fluffy flowerheads, 6-9mm. diameter, with long, thicker exserted styles.

Fruit brown, one-seeded.

Introduced for ornamental reasons.

J F M A M J J A S O N D

Indigenous alternatives

Natal blue haze (*Tetraselago natalensis*)

Anredera cordifolia

(TEN.) STEENIS

Madeira vine, Bridal wreath

Category 1b

Long-lived perennial shrub, twining or climbing over taller plants.

Stems hairless; younger stems green or reddish.
Rope-like and becoming grey with age.

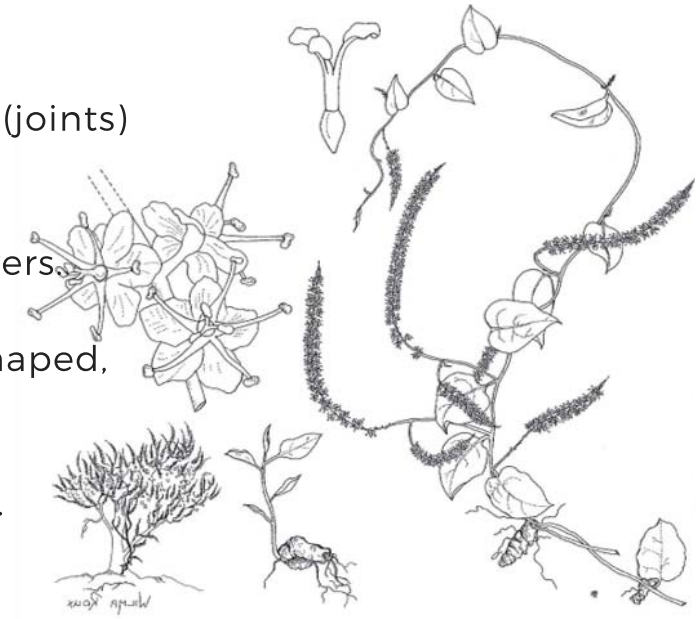
Characteristic wart-like tubers at nodes (joints) along older stems.

Leaf forks carry masses of drooping flowers.

Flowers white or cream, fragrant, star-shaped, with style divided to various degrees.

No fruits; reproduced from aerial tubers.

Introduced as ornamental vine.



J F M A M J J A S O N D

Canna indica

L.

Indian shot | Indiese kanna

Category 1b

Perennial shrub 1-2m. tall, with erect leafy shoots.

Leaves large green or purple-bronze, sheathing the stem.

Flowers narrow with long petals, red or orange, usually yellow below.

Fruits green, spiny, three-valved capsules

Ornamental; seeds used as beads in jewelry.

J F M A M J J A S O N D

Cestrum laevigatum

SCHLTDL.

Inkberry | Inkbessie

Category 1b

Evergreen shrub or tree growing 1-2m. high, but reaching 15m. or more along coastal regions.

Leaves lance-shaped, 150 x 50mm.; releases an unpleasant smell when crushed.

Flowers greenish-yellow, tube-shaped with five small petals.

Fruits green berries; 10mm. long, turning purple-black when ripe.

Poisonous.

J F M A M J J A S O N D

Indigenous alternatives

Mickey Mouse Bush (*Ochna sp.*)
Natal flame bush (*Alberta magna*)
September bells (*Rothmania globosa*)
Wild pomegranate (*Burchellia bubalina*)
Forest bell bush *(Mackaya bella)*

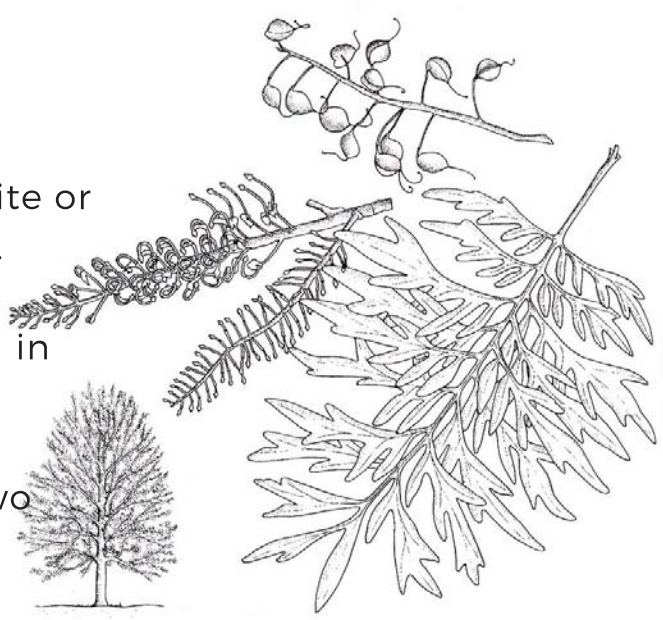
Grevillea robusta

A.CUNN. EX R.BR.

Australian silky oak | Australiese silwereik

Category 3

Trees large, evergreen, 18-30m. tall, with straight trunk and moderately spreading crown.



Leaves dark green above and greyish-white or rusty-silk beneath with a fern-like profile.

Flowers golden-orange flowers produced in terminal, bottle-brush-like sprays.

Fruits brownish-black, leathery, one or two flat-winged seeds.

Introduced as an ornamental tree but also for timber. Sap causes skin and eyelid irritation.

J F M A M J J A **S** **O** **N** D

Hedychium sp.

Four Hedychium species (H. coccineum, H. gardnerianum, H. coronarium and H. flavescens) are designated Category 1b and should be removed from gardens. All invade moist shaded sites, forests and plantations. They can form dense undergrowth that replaces forest understorey species. Their seeds are dispersed by birds.

Hedychium coccineum

BUCH.-HAM. EX. SM

Red ginger lily | Rooigemmerlelie

Category 1b

Herb, robust up to 2m. high.

Leaves broad, bright green or greyish-green (50cm long), sheaths stem.

*Flowers showy, red with pink protruding stamens in spikes up to 35cm. long.

Seeds numerous in capsules.

*** Distinguished from *H. coccineum: H. gardnerianum* flowers yellow with red stamens.**

J F M A M J J A S O N D

Indigenous alternatives

Arum lily (*Zantedeschia sp.*)
Crane flower (*Strelitzia reginae*)
Dragon tree (*Dracaena aletriformis*)
Small-leaved dragon tree (*Dracaena mannii*)
Moore's crinum (*Crinum moorei*)
Blister leaf (*Knowltonia vesicatoria* subsp. *vesicatoria*)

Hedychium coronarium

J. KÖNIG

White ginger lily | Witgemmerlelie

Category 1b

Robust plant up to 2m. high.

Leaves broad, bright green, sheathing the stems.

*Flowers white, sometimes yellow at the base, fragrant, in spikes up to 30cm. long.

Each flower has a slender tube with three narrow and three broad, petal-like lobes.

Bracts large, broad, tightly overlapping.

Fruit capsules contain numerous seeds.

*** Distinguished from *H. coronarium*: *H. flavescens* flowers yellow, sometimes reddish-yellow basally; calyx ± the length of corolla tube.**

J F M A M J J A S O N D

Indigenous alternatives

Arum lily (*Zantedeschia sp.*)
Crane flower (*Strelitzia reginae*)
Dragon tree (*Dracaena aletriformis*)
Small-leaved dragon tree (*Dracaena mannii*)
Moore's crinum (*Crinum moorei*)
Blister leaf (*Knowltonia vesicatoria* subsp. *vesicatoria*)

Ipomoea sp. (Morning Glory)

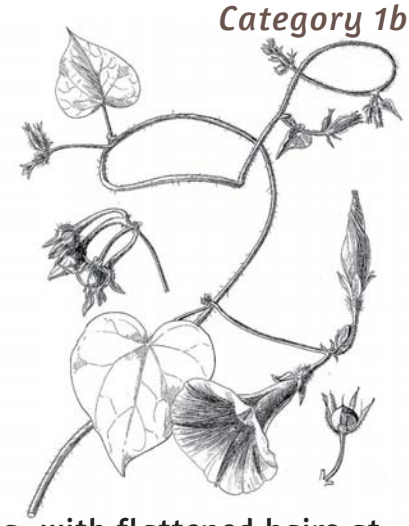
There are three species, one of which is indigenous and two are Category 1b invaders that should be removed from gardens. They invade woodlands, waste areas, arable land, roadsides, river banks and coastal dunes. ***The indigenous species, I. cairica (Coastal morning glory, Messina creeper) has divided (palmate) leaves and is widespread in the Eastern Cape, KwaZulu-Natal, Limpopo and Mpumalanga.***

Ipomoea indica = *I. congesta* R. Br.

(BURM.) MERR.

White moonflower | Meerjarige purperwinde

Category 1b



Herbaceous twining perennial with hairy stems.

Leaves bright green, sparsely hairy, heart-shaped.

Flowers are funnel-shaped, purplish-blue, reddish, magenta or white, sometimes with contrasting stripes.

*Sepals pointed but not long-tapering 10-15mm. long, bristly at base.

***Distinguished from *I. purpurea*: sepals long-tapering, 14-22mm long, with flattened hairs at base.**

J F M A M J J A S O N D

Lantana camara
(L.)

Lantana | Gewone lantana

Category 1b

Shrub spreading or untidy scrambler.

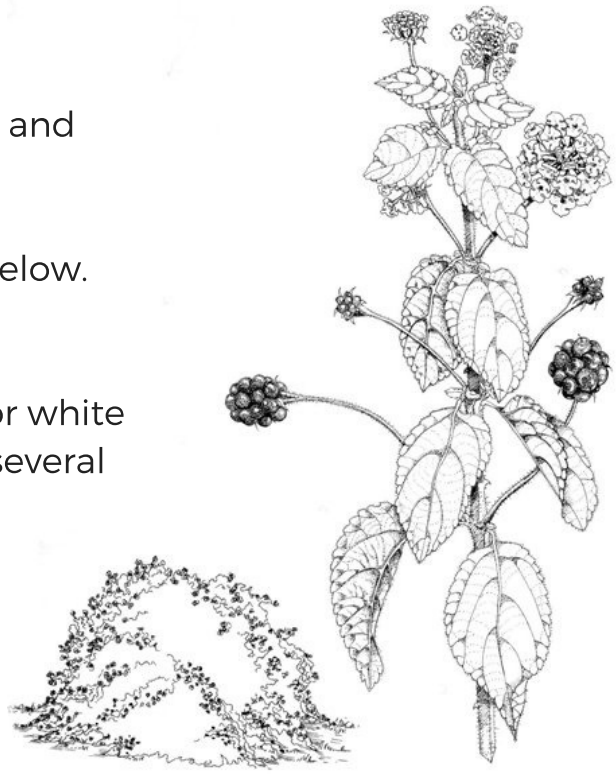
Stems usually covered with short, stiff hairs and recurved thorns.

Leaves dark green, rough, hairy and paler below. Smell strongly when crushed.

Flowers pink, red, crimson, orange, yellow or white in compact, flat-topped heads, often with several colours in one head.

Fruit glossy, green, turning purplish-black.

Poisonous.



J F M A M J J A S O N D

Indigenous alternatives

Natal bauhinia (*Bauhinia natalensis*)
September bush (*Polygala myrtifolia* var. *myrtifolia*)
Plumbago (*Plumbago auriculata*)
Pink sage (*Ocimum labiatum*)
Wild pomegranate (*Burchellia bubalina*)

Metrosideros excelsa

= *M. tomentosa A. Rich.*

SOL. EX. GAERTN.

New Zealand Christmas tree | Nieu-Seelandse perdestert

Category 1a

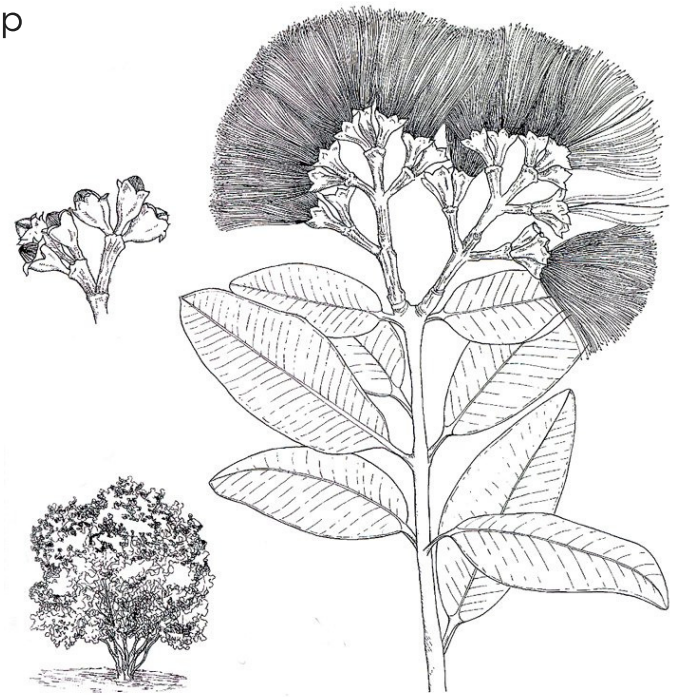
Wide-spreading evergreen tree growing up to 5-6m. high, but sometimes as high as 20m.

Several branches originate close to the ground.

Leaves oblong to oval, bright green and smooth with a felt-like texture beneath.

Flowers crimson in bottlebrush clusters.

Produce white or grey velvety capsules.



J F M A M J J A S O N D

Indigenous alternatives

White Milkwood (*Sideroxylon inerme*)
Coastal Silver-oak (*Brachylaena discolor*)
Camphor Bush (*Tarchonanthus camphoratus*)
Dune olive (*Olea exasperata*)
Sand Olive (*Dodonaea viscosa* var. *angustifolia*)
Sneezewood (*Ptaeroxylon obliquum*)
Wild pepper tree (*Loxostylis alata*)
Wild Almond (*Brabejum stellatifolium*)
Blue-flowered fountain bush (*Psoralea pinnata* var. *pinnata*)
Lance-leaved myrtle (*Metrosideros angustifolia*)

Myoporum montanum

= *M. tenuifolium G. Frost.*

R. BR.

Manatoka

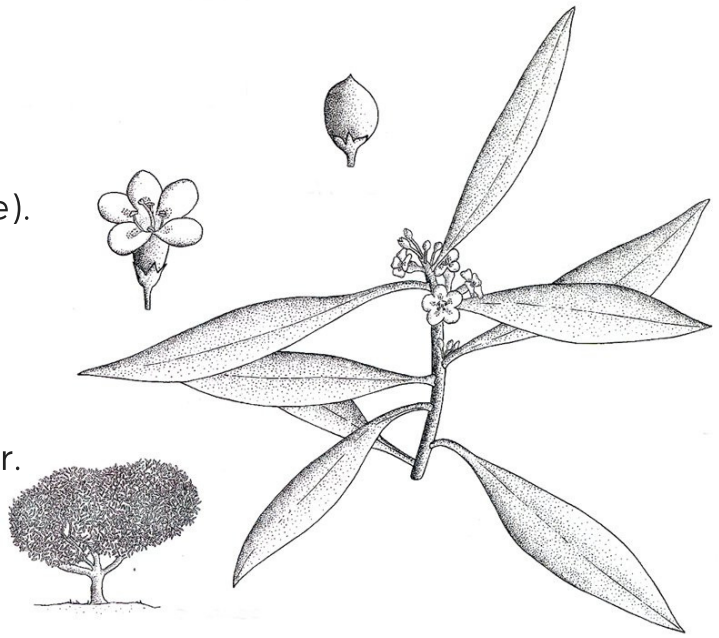
Category 3

Evergreen shrub, growing to up to 2m. tall.

Leave simple, dull green, thinly fleshy but firm, tapering towards the base so that it lacks a distinct leafstalk (petiole).

Flowers white with purplish dots appearing most of the year.

Cultivated for ornament, shade, shelter.



J F M A M J **J** **A** **S** **O** N D

Indigenous alternatives

Natal plum (*Carissa macrocarpa*)
Num num (*Carissa bispinosa*)
Forest Bell bush (*Mackaya bella*)
Sweet pea bush (*Podalyria calyptrata*)

Nephrolepis exaltata = *Polypodium exaltatum L.*

(L.) SCHOTT.

Sword fern | Swaardvaring

Category 1b

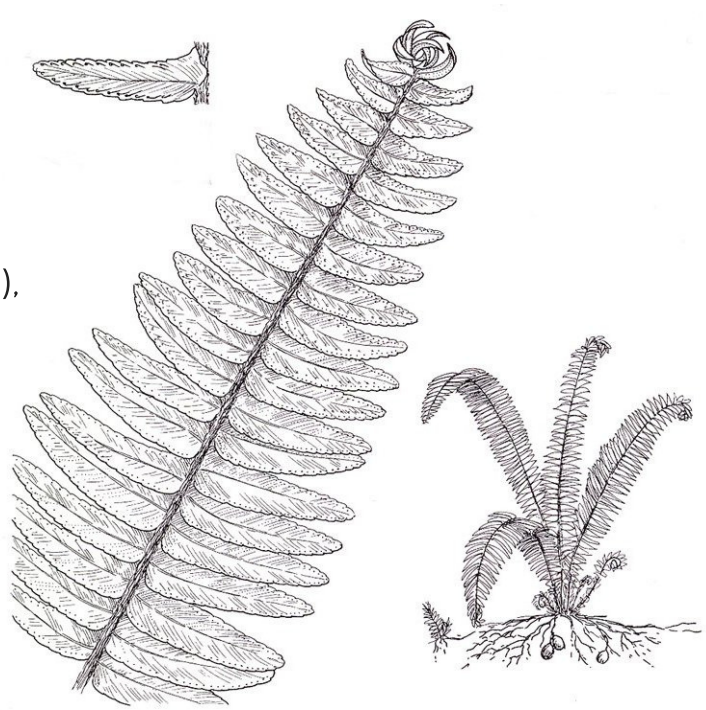
A tufted evergreen fern, growing up to 1m. high.

Form extensive colonies by means of stolons.

Bright green dissected leaves (pinnae), 100 x 6cm.

Arching to erect, linear fronds with shallowly toothed, sickle-shaped pinnae.

Fruiting bodies brown, 1.0-1.5mm, on underside of pinnae.



Alternatives

Giant swordfern (*Nephrolepis biserrata*)

Nerium oleander

(L.).

Oleander | Selansroos

Category 1b

Evergreen shrub or small tree growing up to 6m. high.

Leaves dark, dull-green, paler below and have distinctive veins and a prominent midrib.

Flowers pink, red or white and slightly aromatic, with a single row of petals.

Fruits reddish brown, finger-like, 10-20cm. long, ridged and split longitudinally into two halves.

Seeds with tufts of hairs.

The whole plant is highly toxic and lethal; sap is a skin irritant.

J F M A M J J A S O N D

Indigenous Alternatives

September bush (*Polygala myrtifolia* var. *myrtifolia*)
Pride-of-de-Kaap (*Bauhinia galpinii*)
Dune poison bush (*Acokanthera oblongifolia*).

Pereskia aculeata

MILL.

Pereskia | Barbadosstekelbessie

Category 1b

Spiny vine with long, slender branches and semi-succulent young stems. Older stems woody with clusters of hard, straight spines 30-40mm. long.

Leaves with pairs of short, hooked spines in the leaf axils. Bright green to yellowish, lance-shaped leaves.

Flowers white, cream or yellow, lemon-scented.

Succulent berries about 20mm. across, green turning yellow with age.

Invades forest margins, clearings and plantations.

J F **M A M J** J A S O N D

Pinus sp. (Pines | Dennebome)

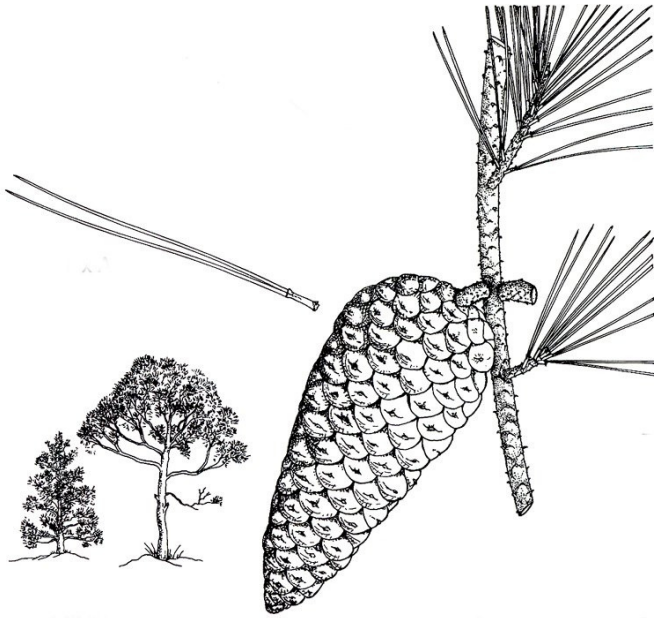
A number of species have been introduced to South Africa for timber. Some are more invasive than others and some have greater commercial value than others. Most of the pines in Nature's Valley are ***category 2*** *invaders and should be removed. However, some of these trees are home to weavers and other birds and should only be cut down in autumn, the non-breeding season.*

Pinus halepensis

MILL.

Category 3*

Aleppo pine | Aleppoden



A coniferous tree, up to 15 (-20)m. high, conical in shape, short trunk when young and rounded to oblong with a crooked trunk when older.

Crown open and see-through, with silvery-grey bark becoming darker.

Needles grey-green to yellow-green, in pairs, 40-80mm. long, slender and stiff.

Cones reddish brown, glossy, 80-100mm. long, reflexed cone stalk

It invades grasslands and fynbos, particularly on dry soils.

Biocontrol under investigation.

Category 3 in Eastern Cape, Free State and Western Cape.

Pinus patula *and hybrids, varieties and selections*

SCHIEDE EX SCHLTDL. & CHAM.

Patula pine, Mexican weeping pine | Treurden

Category 2*

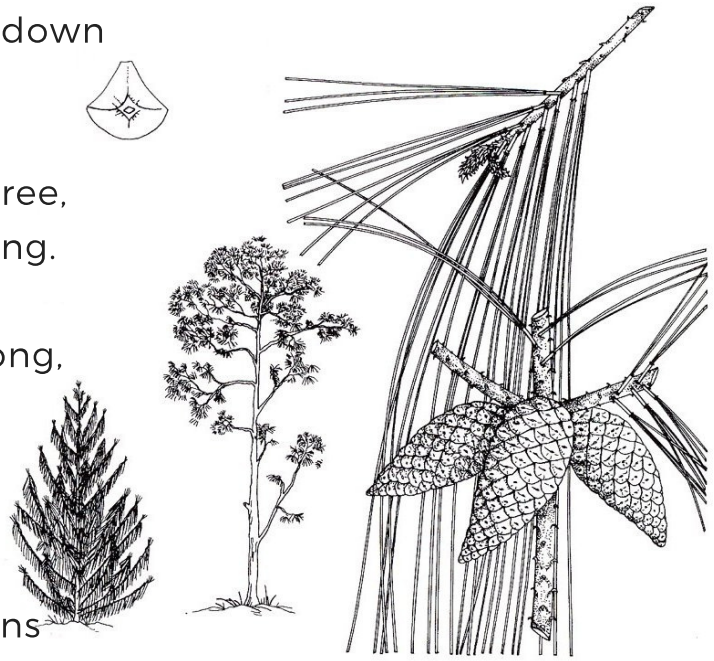
Coniferous tree, with drooping foliage, to 12-20(-40)m. high; often forked lower down with long, spreading branches.

Needles bright green in bundles of three, 120-300mm. long, slender and drooping.

Cones in clusters of 2-5, 70-100mm. long, strongly reflexed on short stalks.

Cultivated for timber.

Invades most grasslands, forest margins and gaps, road cuttings; affects fire and hydrological regimes.



***Exempted for existing plantations.**

Rubus sp.

Identification of Rubus species is difficult due to hybridisation. There are eight species native to southern Africa and a further ten that are naturalised.

Rubus cuneifolius *and hybrids,* R. X PROTEUS C. H. STIRT. PURSH.

American Bramble | Amerikaanse sandbraam

Category 1b

Erect to sprawling, thorny shrub growing up to 2m. high with deeply ridged stems.

Green, finely serrated leaves sometimes densely grey-downy beneath. Usually 3-lobed, sometimes 5-lobed.

Flowers white, rarely pink, with petals much longer than the sepals.

Cultivated for edible fruits - red turning black with age.

Biocontrol under investigation

J F M A M J J A S O N D

Rubus fructicosus

L. AGG.

European blackberry | Bosbraam

Category 2

Thorny shrub to 2m. high.

Strongly arching stems that are angled or rounded.

Green leaves, sometimes grey downy beneath.

Flowers pink or white with petals much longer than sepals, flower heads prickly.

Fruits edible, red turning black.

Biocontrol under investigation.

J F M A M J J A S O N D

Schinus terebinthifolius

RADDI

Brazilian pepper tree | Brasiliaanse peperboom

Category 1b*

Fast-growing evergreen tree, spreading branches that coppices readily.

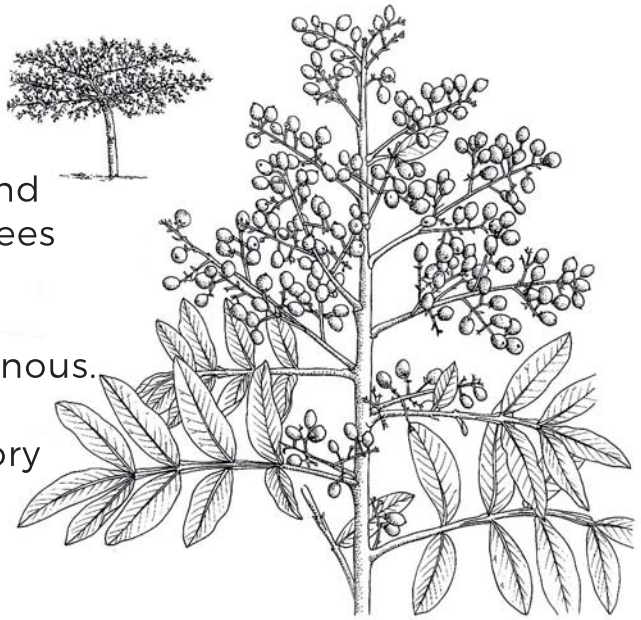
Leaves smell peppery when crushed.

Flowers small, creamy-white with male and female flowers developing on separate trees (dioeceous).

Fruits bright red, slightly fleshy and poisonous.

Sap irritates skin and affects the respiratory tract.

Invades watercourses and forest margins.



***Category 1b in Eastern Cape, KwaZulu-Natal, Limpopo and Mpumalanga; category 3 in Free State, Gauteng, North-West, Northern Cape and Western Cape.**

J F M A M J J A S O N D

Senna didymobotrya

(FRESEN.) IRWIN & BARNEBY

Peanut butter cassia | Grondboontjiebotterkassia

Category 1b

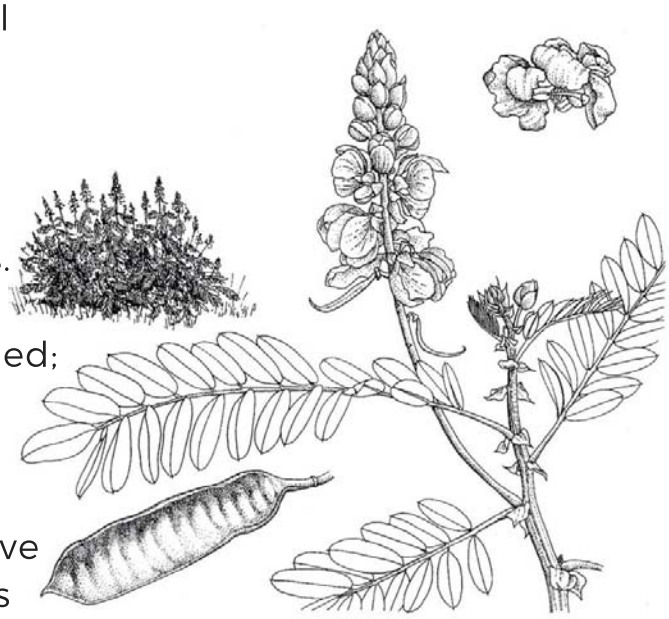
Wide-spreading evergreen shrub to small tree up to 3m. high.

Leaves dark green.

Flowers bright yellow in upright racemes.

Seed pods green, downy, soft and flattened; turn dark brown with age.

Despite poisonous leaves, extracts are widely used in central Africa as a purgative and for treatment of malaria, other fevers and jaundice.



J F M A M J J A S O N D

Indigenous alternatives

Weeping wattle (*Peltophorum africanum*)

Solanum mauritianum

SCOP.

Bugweed | Groot bitterappel

Category 1b

Shrub or small tree up to 4m. high covered with whitish-felty hairs.

Leaves, dull green, velvety above and white-felty beneath. Strong-smelling when bruised.

Flowers, purple in compact, terminal clusters on densely felted stalks up to 10cm. long.

Spherical berries, green turning yellow with age.

Hairy leaves and stems are a respiratory tract and skin irritant. Unripe fruits, poisonous.

J F M A M J J A S O N D

Indigenous alternatives

Weeping sage (*Buddleja auriculata*)
False olive (*Buddleja saligna*)
Sagewood (*Buddleja salviifolia*)
Large spurflower bush (*Plectranthus ecklonii*)
Healing-leaf tree (*Solanum giganteum*)
Wild medlar (*Vangueria infausta*)

Spartium junceum

L.

Spanish broom | Spaanse besem

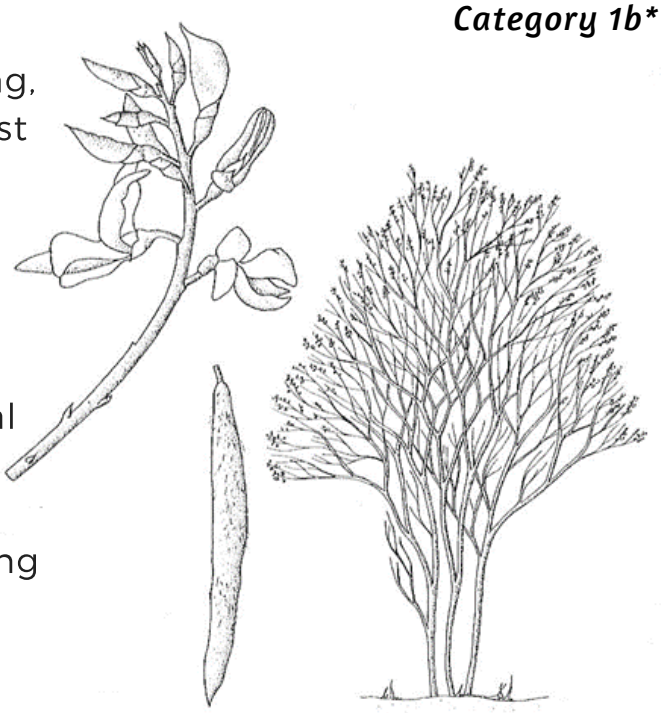
Category 1b*

Reed-like shrub up to 2,5m. high with long, slender, cylindrical green branches, almost leafless.

Leaves are blue-green, silky beneath, and deciduous.

Flowers, fragrant yellow; borne in terminal clusters 30-40cm. long.

Fruits flattened, brown pods to 75mm. long initially covered with white silky hairs.



Category 1b in Eastern Cape and Western Cape; category 3 in Free State, Gauteng, KwaZulu-Natal, Limpopo, Mpumalanga. North-West and Northern Cape.

J F M A M J J **A S O N** D

Indigenous alternatives

Cape honeysuckle (*Tecoma capensis*)
Honey euryops (*Euryops virgineus*)
Cape rattlepod (*Crotalaria capensis*)
Bush-tick berry (*Osteospermum moniliferum* subsp. *moniliferum*)
Natal laburnum (*Calpurnia aurea*)

Syzygium paniculatum

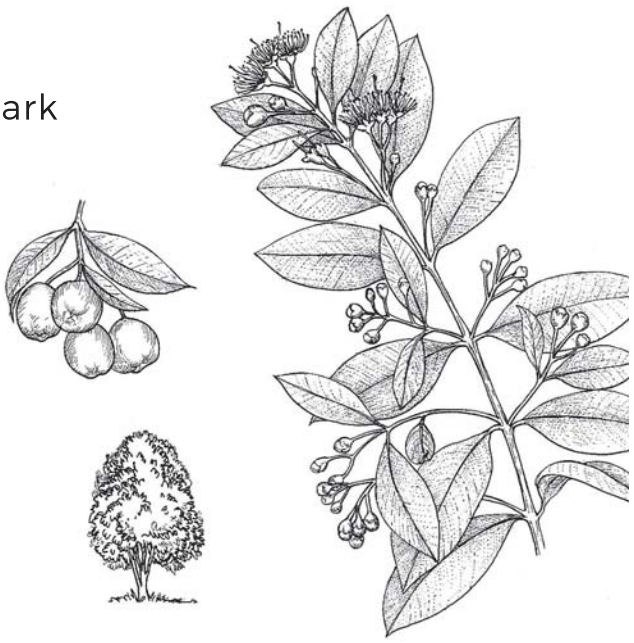
GAERTN.

~ *Eugenia myrtifolia Sims; E. paniculata Banks; E. Australis J. C. Wendl.*

Australian water pear | Australiese waterpeer

Category*

Smooth, evergreen shrub or tree 3-6(-10)m. high, initially columnar but developing spreading, rounded crown with maturity, bark dark greyish-brown.



Leaves dark green, glossy, tinged with red when young, rounded to shortly pointed at the tip, 30 x 80mm.

Flowers creamy-white, stamens long and showy.

Fruit, pinkish-red berry, 20mm. long, succulent, edible.

***Eugenia* is not listed but it is an important problem plant in the Valley as its edible fruits attract baboons and monkeys, often resulting in human-animal conflicts.**

J F M A M J J A S O N D

More Indigenous Alternatives

Trees, selected for flowering

Mackaya bella Harv. (forest bell bush, river bell)
Buddleja saligna (false olive; witolien)
Cunonia capensis L. (red alder, butterspoon tree; rooiels)
Dais cotinifolia (pompon tree, pincushion tree; speldekussing, basboom)
Nuxia floribunda (forest elder, forest nuxia, wild elder; bosvlier; viler)
Apodytes dimidiata subsp. *dimidiata* (white pear, bird's eye; witpeer)
Halleria lucida (tree fuchsia, white olive; notsung, witolienhout, witolyfhout)
Pittosporum viridiflorum (cheesewood, white cape beech; witboekenhout)
Dombeya rotundifolia var. *rotundifolia* (wild pear; drolpeer)
Heteropyxis natalensis (lavender tree; laventelboom)
Ochna serrulata (Mickey Mouse bush), *O. pulchra & O. pretoriensis* (barnardsgif)
Alberta magna (natal flame bush; breekhout)
Rothmannia globosa (September bells; klokkies-valskatjiepiering)
*Burchellia bubalina (*wild pomegranate; wildegranaat)
Mackaya bella (forest bell bush; river bell)

Ferns

Polystichum incongruum (forest shield fern; woud skildvaring)
Polystichum pungens (forest shield fern; woud skildvaring)
Rumohra adiantiformis (Knysna fern)

Creepers

Jasminum multipartitum (starry wild jasmine; sterretjies-jasmyn)
Mondia whitei (White's ginger)
Senecio macroglossus (flowering ivy, cape ivy; madeliefie-klimop)
Senecio tamoides (canary creeper; kanarieklimop)

Part 3: Control of Problem Plants

The amended regulations stress that, when controlling plants that occur in areas where they are not allowed, methods should be used that are appropriate for the species concerned as well as to the ecosystem in which they occur. One or a combination of the following control methods may be used: uprooting, felling, cutting, burning, treatment with registered herbicides, biological control or any other recognised and appropriate method. Repetitive follow-up actions will be mandatory until the required control has been achieved.

The aim of control is to reach a point where, ideally, the plants concerned do no longer occur in that particular area or, at least, where the plants can no longer grow, produce viable seeds or spores, coppice, sprout or produce root suckers, reproduce vegetatively, propagate themselves in any other way, or spread into other areas. If this is not possible, the plants have to be contained and their multiplication limited as far as possible.

When controlling weeds and invaders, damage to the environment has to be limited to the minimum. Environmental damage may include:

- herbicidal damage to non-target plants.
- the chemical pollution of soil or water or any other threat to non-target organisms.
- the irresponsible use of fire.
- the creation of a fire hazard by allowing flammable material to accumulate in fire-sensitive areas.
- unnecessary or irresponsible disturbance of the soil, especially on riverbanks or slopes.
- failure to rehabilitate denuded areas so as to prevent soil erosion and invasion by other undesirable species.
- any other action that might upset the ecological balance of the environment.

Be sensitive to the environment when removing problem plants. Please bear in mind that most birds in the Southern Cape breed between August and January and are easily disturbed at this time of year.

Weed control includes the management of the seed source and rehabilitation of the affected land. Thus control methods used depend on the environment, the soil type, the type of weed and the extent of weed infestation. Weeds should be destroyed using the method that is most cost effective and causes the least disturbance to the environment. Most weeds are incredibly persistent so follow up operations are always necessary.

It is often preferable to kill trees standing as this maintains the shade over the seed-banks. Cutting trees down disturbs the soil bringing alien seeds to the surface and allows more light to penetrate to the ground encouraging these seeds to germinate. Indigenous trees are able to grow under lower light conditions than alien trees, germinating more easily under these light conditions. They also need protection against hot summer sun and high winds until they are established. In the rehabilitation of an area try to encourage ground cover as quickly as possible without disturbing the soil too much.

When large trees such as blackwood are removed the timber can often be put to good use. The trunks can be cut into planks and trimmings used as firewood. Where possible try to avoid using chemicals as they always have a residual effect on the soil. Where they are needed use herbicides with the shortest half-life, that is the time needed to eliminate half of the active ingredients from the environment. Try to use selective herbicides that destroy only the target plant species. Herbicides should be mixed immediately before use or they will be less effective.

Precautions must be adhered to when working with herbicides. Wash your hands after using any herbicide. Do not smoke or eat while working with herbicides and obey the manufacturer's instructions. Store all herbicides in a safe place and destroy all empty containers. Mark containers, brushes, etc used with these products and use them only for this purpose. Add a dye to poisons so that the person applying the poison can see where it is going and which plants have been treated.

A full list of herbicides used in South Africa can be downloaded from http://invasives.org.za/resources/control-methods#herbicides. Here you will find information on which herbicide to use on specific problem plants, their dosage and additional treament methods to ne used in conjunction with the designated herbicide.

Biological control of weeds is subject to rigorous regulations, and is recognised by NEMBA as a valid control method only if it is practised in accordance with all these regulations.

Biological control is the introduction of the plant's natural enemies to its new habitat, so that these natural enemies will remove the plant's competitive advantage. In the control of invasive plants, the commonly used biocontrol agents are insects, mites and pathogens (disease-causing organisms such as fungi). These agents will damage the targeted plant by feeding on the stem, root, leaves or flowers of the plants.

More information on biocontrols and target species may be found at http://invasives.org.za.

Methods of Control

The advice given here is taken from literature surrounding the topic. The Nature's Valley Ratepayers' Association and the Nature's Valley Trust are not in any way advocating the use and application of specific products. You are urged to seek professional advice before using any herbicide.

HAND-PULLING

Seedlings and saplings should be hand-pulled where possible as long as they are not growing in sandy soil or in an area with sparse ground cover. This is because when the soil is disturbed seeds can be brought to the surface where they germinate more readily. A 'tree popper' can be used to pull out saplings up to 3 cm. in diameter.

FOLIAR SPRAY

This is a very effective method of destroying weeds by spraying plants with a herbicide. Soil disturbance is avoided. A selective herbicide such as 0.5% Garlon or Ridder in water should be used as this will not affect surrounding fynbos or indigenous vegetation with the exception of keurboom. Foliar vegetation should be roughly a meter high in order to provide sufficient bulk for the rootstock to be destroyed. If the vegetation is too high, cut it down and wait for it to regrow. The vegetation should be sprayed in summer when the plants are growing vigorously. Always spray on windless days to avoid drift of the herbicide. Avoid spraying before rain that will wash off the herbicide. Wear a mask to protect yourself against inhalation.

BASAL STEM TREATMENT

This is a quick, easy and cost effective way of controlling shrubs and young trees with a stem diameter of less than 10 cm. The lower portion of the stem is sprayed and thoroughly wetted with herbicide using a paintbrush. Garlon or Ridder mixed with diesel can be used in basal stem treatments to destroy small trees in situ. This method must be used to destroy bugweed but the herbicide of preference for this is Starane.

ROOT COLLAR TREATMENT

This should be used to kill adult trees in situ and is more effective than ring barking. Roughly measure the diameter of the tree. Using a chisel, axe or saw cut a ring around the trunk and through the bark of the tree the measured distance above the ground. For example if the diameter of the tree is 20cm cut a ring through the bark 20cm above the ground. With a chisel peel back the bark of the tree down to the roots forming a well at the base of the tree. If you ensure that the bark is pulled back beyond all growth nodules on the stem and the exposed rootstock then the tree should not sprout and the use of herbicides should not be required. Leave the loosened bark in place. In species that coppice easily a herbicide such as 3% Timbrel dissolved in water can be used in conjunction with root collar treatments in order to prevent sprouting of the rootstock. It is essential to use herbicides when dealing with eucalyptus and poplars. It may also be more cost effective to use herbicides on blackwood and wattle as fewer follow up treatments would be needed. Protect your eyes when using Timbrel. It is a dangerous herbicide and must be used with care.

CUT STUMP TREATMENT

It is often desirable to fell a tree for aesthetic reasons or if it threatens a house or power line. If necessary the stump may be treated with a herbicide within 3 hours of felling to prevent sprouting. The cambrial layer is the transport route of the tree and lies just below the bark. A herbicide such as 3% Timbrel in water and red dye should be sprayed onto the cambrial layer once a tree is felled. All injured parts of the stump should also be treated. If any lateral branches exist on the stump, the bark below these should be pulled back and the exposed area treated with herbicide. It is not necessary to dig holes into the middle of the stump and fill these with diesel as the center of a tree trunk is dead and the diesel may pollute the environment.

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3.3. Legislation, permits, declaration forms herbicide list, etc:
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3.5. Indigenous species:
Red List of South African Plants, (http://redlist.sanbi.org)

3.6. Photographs of alternative species:
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