







Invasive Alien Plants in South Africa

Lesley Henderson

KEY TO SYMBOLS





LEGAL STATUS

- PE** Prince Edward Isles only
-  **NEMBA category 1a:** *Requiring immediate compulsory control*
-  **NEMBA category 1b:** throughout South Africa/in part of South Africa
Must be controlled or eradicated where possible
-  **NEMBA category 2:** throughout South Africa/in part of South Africa
Allowed only in specified areas under controlled conditions
-  **NEMBA category 3:** throughout South Africa/in part of South Africa
Must be controlled within riparian areas; no further cultivation allowed

INVASIVE STATUS

- T; Pt** Transformer; Potential transformer
- S; E; R** Special effect weed; Emerging weed; Ruderal and agrestal

BIOLOGICAL CONTROL

-  Effective biological control agents available; control complete
-  Biological control agents available; control substantial
-  Biological control agents available; control negligible
-  Biological control agents available; control not determined or under evaluation

Degree of biological control after Klein (2011) and updated 2018









Complete: no other control measures are needed to reduce the weed to acceptable levels, at least in areas where the agents have been established

Substantial: other methods are needed to reduce the weed to acceptable levels, but less effort is required (e.g. less frequent herbicide application or less herbicide needed per unit area)

Negligible: in spite of damage inflicted by the agents, control of the weed remains entirely reliant on the implementation of the other control measures

Not determined: either the release of the agents has been too recent for the meaningful evaluation, or the programme has not been evaluated

POTENTIAL THREAT OR IMPACT

- | | | |
|---|---|--|
|  Biodiversity |  Water resources |  Fire |
|  Soil erosion |  Agriculture |  Forestry |
|  Human and animal health |  Tourism, recreation | |

INVASIVE ALIEN PLANTS IN SOUTH AFRICA

by
Lesley Henderson



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA



A complete guide
to restricted invasive alien plants in South Africa,
including another 40 taxa invasive in that region

INVASIVE ALIEN PLANTS IN SOUTH AFRICA

by Lesley Henderson

Copyright © 2020 Agricultural Research Council. All rights reserved. Permission is granted to Department of Environment, Forestry and Fisheries of South Africa to reproduce this publication or any part thereof for non-profit purposes and with full acknowledgement to the author and publisher.

ISBN: 978-0-620-86146-5

Artists: Major Contributors

Marietjie Steyn

Wilma Roux

Sandie Burrows

Gill Condy

Rita Weber

Photographers: Major Contributors

Lesley Henderson

Geoff Nichols

Design and layout:

Mac Image

Printing and binding:

Novus Print

Sponsor:

Department of Environment, Forestry and Fisheries of South Africa: Natural Resources Management Programmes (DEFF: NRMP)

CONTENTS

FOREWORD	4
INTRODUCTION	5
ACKNOWLEDGEMENTS	7
IMPACTS OF INVASIVE SPECIES	9
INVASIVE STATUS	14
CONTROL METHODS	16
GUIDE TO IDENTIFICATION OF THE SPECIES	18
Example page	18
Symbols used	19
Grasses, Reeds and Grass-like Plants	20
Aquatic and Wetland Plants	36
Marine Plants	54
Herbs	56
Climbers and Scramblers.....	110
Trees and Shrubs: succulent	134
Trees and Shrubs: woody	166
RESTRICTED SPECIES AND NEM:BA	306
NATIONAL LISTS OF INVASIVE PLANT SPECIES	310
BIOLOGICAL CONTROL AGENTS	343
OTHER SOURCES OF INFORMATION	354
GLOSSARY	358
INDEX OF BOTANICAL AND COMMON NAMES	363
ABOUT THE AUTHOR	382
MAP OF SOUTH AFRICA AND PLACES	383
QUICK GUIDE (INSIDE BACK COVER)	384

FOREWORD

The impacts of invasive plants cannot be over-emphasised:

- They are the single biggest long-term threat to our water security. If our catchments are invaded by pines, wattles, hakea and other thirsty invasives, water security will collapse.
- South Africa is the third-most species-rich country in the world. Invasive species are the single biggest threat to our exceptional biological diversity.
- They exacerbate wild fires, many invasive species burning at ten-fold the intensity of the species that they displace.
- They exacerbate erosion, siltation of rivers and dams, sedimentation and poor water quality, mudslides and flooding.

For these reasons, South Africa has among the world's most comprehensive programmes to address the problems of invasive species:

- It is led by the Working for Water programme (now in its 25th year), through which about 50,000 people are employed to control invasive species.
- South Africa is at the forefront of biological control research and application, finding the natural enemies of invasive plants, and ensuring that it is safe to release them in our country.
- The Biosecurity Unit is strengthening our capacity to prevent the introduction of potentially invasive species; tackling emerging invasive species (before they become widespread), and enforcing our legislation on alien and invasive species.
- The Value-Added Industries programme is utilizing invasive biomass for building materials, furniture and other products, freeing up budget to address priorities such as biological control, clearing of high-altitude areas and early detection of emerging species.

As important as is this work, so much more needs to be done. South Africa will need the active engagement of its citizens, if it is to contain the threat of invasive species. It is each of us who must be aware of the risks of moving species to areas in which they do not occur, and to manage invasive species that are under our control.

With so many invasive plant species already in our country, and a high risk of further invasions (including species that will become invasive as the climate changes), a first step is to be able to identify them. Lesley Henderson's comprehensive revision of her seminal "Alien Weeds and Invasive Plants", published in 2001, is greatly welcomed. This beautifully illustrated book, with its apt descriptions, is the product of decades of careful research and field work. It will also be published on-line, in an effort to reach as many key people as possible. It needs to be widely available, for we are all part of the problem – and part of the solution.

May this book inspire more and more South Africans to take the necessary steps to contain invasive plants. We all owe Lesley Henderson a great deal, for her meticulous and dedicated work.

Dr Guy Preston
Deputy Director-General
Department of Environment, Forestry and Fisheries

INTRODUCTION

The main objective in producing this book is to enable members of the public and law enforcement officers to identify the **restricted invasive alien plant species in South Africa** covered by the "NATIONAL ENVIRONMENTAL MANAGEMENT: BIODIVERSITY ACT (NEM:BA) 2004" (Act No. 10 of Republic of South Africa 2004). The book includes a further 40 taxa invasive in this region, some of which have been proposed for listing in the regulations but require further assessment. The book also represents the culmination of the second phase of a mapping project, the Southern African Plant Invaders Atlas (SAPIA), which was started in 2006 and ended in 2016.

The plants described in this book are alien or non-native species. All have been introduced into South Africa, either intentionally or unintentionally and with the exception of a few, have either escaped cultivation or become naturalised i.e. are capable of reproducing and spreading without the direct assistance of people. Some species are largely confined to places of severe human disturbance and are classified as ruderal weeds (of waste places) and agrestal weeds (of cultivated lands). By far the majority of species in this book are invaders of natural and semi-natural habitats and they are classified as environmental weeds or invaders. The most serious environmental weeds are transformers which are capable of altering the structure, integrity and functioning of entire ecosystems.

Many species described in this book are grown either commercially on a large or small scale, or are cultivated in parks and gardens. Their inclusion in this book does not automatically brand them as undesirable plants which should be eradicated in all situations. On the contrary many are extremely valuable plants under cultivation, such as the eucalypts, pines and wattles. The same plants, however, are considered undesirable when they grow in places where they were not intended, particularly in conservation areas and along water-courses.

This book has been built upon a previous publication: 'Alien weeds and invasive plants' by L. Henderson (2001). The full reference to this publication and other sources of information are given in the Chapter: OTHER SOURCES OF INFORMATION.

The GUIDE TO IDENTIFICATION OF THE SPECIES is sub-divided into six major sections: **grasses, reeds and grass-like plants** (26 taxa), **aquatic and wetland plants** (30 taxa), **marine plants** (3 taxa), **herbs** (84 taxa), **climbers and scramblers** (38 taxa) and **trees and shrubs** (242 taxa). Sub-categories within sections provide further assistance in identification. The species appear in alphabetical order within each sub-category. A **QUICK GUIDE** to the identification of invaders has been placed inside the back cover for easy reference. This guide will assist the reader in locating a species within the book based on characteristics that are always visible.

Botanical names are mainly according to the Plant List (www.theplantlist.org) and US National Plant Germplasm System: GRIN Taxonomy (<https://npgsweb.ars-grin.gov/gringlobal/taxonomybrowse.aspx>).

The **text** includes the botanical name (and synonym where applicable), English common name, family, short diagnostic description with important features underlined, cultivated use, habitats invaded and region of origin. Species that are known to be poisonous or irritant are noted. Where two or more species are very similar one species is illustrated and their distinguishing features given in the text.

Species **distribution maps** indicate all known sites where a species has been recorded according to information in the SAPIA database which includes surveys by the author dating back to 1979. Where there were obvious gaps, additional records were obtained from the literature and Botanical Database of Southern Africa (BODATSA) (<http://posa.sanbi.org/sanbi>). Some of these records predate 1979. Full details of the localities and dates of recording are available from BODATSA and the SAPIA Database (see OTHER SOURCES OF INFORMATION).

Symbols indicate the legal and invasive status, potential impacts or threats, harmful properties and degree of biological control of each species.

Legal status refers to the listing of the species in the regulations under NEM:BA. See RESTRICTED SPECIES AND NEM:BA for the full regulations concerning the control, propagation and trading of these species.

Invasive status will enable the reader to differentiate between the species based on different levels of invasiveness. This will also assist managers in deciding on priorities for weed control. See INVASIVE STATUS for a discussion of the terms used.

Potential impacts or threats to biodiversity, water resources, fire regimes, agriculture, forestry, tourism and recreation give an indication of some of the negative effects which can result from invasions by the species. See IMPACTS OF INVASIVE SPECIES for more information on this subject.

Poisonous, irritant and **injurious** properties to humans and animals provides further motivation for the control or eradication of invasive plants. The plant parts which are most poisonous or irritant are underlined and the human or animal parts that are affected are given in brackets.

Biological control using natural pests and enemies is indicated for those species for which a control programme has been initiated. See BIOLOGICAL CONTROL AGENTS for a table of biological control agents which are established in South Africa and the damage which they inflict on their target host plants. For more information consult the literature and addresses given under OTHER SOURCES OF INFORMATION.

ACKNOWLEDGEMENTS

The **South African National Biodiversity Institute (SANBI)** is thanked for distribution records from the Pretoria National Herbarium and BODATSA, and for permission to reproduce line drawings from their archives. The artists and the species illustrated follow:

Gill Condy: *Acacia dealbata*, *Ageratina adenophora*, *Harrisia martinii*, *Nassella tenuissima*, *Pereskia aculeata*, *Pistia stratiotes*, *Prosopis glandulosa* var. *torreyana*, *P. velutina*

Betty Connell: *Cirsium vulgare*, *Datura ferox*, *D. stramonium*, *Hypericum perforatum*, *Xanthium spinosum*, *X. strumarium*

Kathleen Lansdell: *Salsola tragus*

Cythna Letty: *Alhagi maurorum*, *Datura innoxia*, *Pennisetum clandestinum*, *Ricinus communis*

Marguerite Scott: *Passiflora caerulea*

Adele Walters: *Chromolaena odorata*, *Cuscuta campestris*

Rita Weber: *Acacia cyclops*, *Acacia longifolia*, *Acacia mearnsii*, *Acacia melanoxylon*, *Acacia pycnantha*, *Acacia saligna*, *Lantana camara*, *Myriophyllum aquaticum*, *Nassella trichotoma*, *Nerium oleander*, *Paraserianthes lophantha*, *Salvinia molesta*, *Sesbania punicea*

Hester Wouda-du Toit: *Pennisetum villosum*

The following SANBI and affiliated personnel are thanked for their photos; their names appear next to each photo:

Michael Cheek, Dan'sile Cindi, René Glen, Haylee Kaplan, Bongani Mashele, Barbara Mashope, Desika Moodley, Moleseng Moshobane, Peter Shisani, Hlobosile Sithole, Ernita van Wyk, Mike Wells, Chris Willis, John Wilson and Pieter Winter.

Thanks to the artists who completed the following drawings:

Sandie Burrows: *Acacia decurrens*, *Acacia elata*, *Casuarina equisetifolia*, *Jacaranda mimosifolia*, *Ligustrum lucidum*, *Ligustrum sinense*, *Passiflora edulis*, *Pueraria montana*, *Psidium cattleianum*, *Rosa rubiginosa*, *Salix babylonica*, *Salix fragilis*, *Syzygium jambos*

Gill Condy: *Convolvulus arvensis*, *Egeria densa*, *Elodea canadensis*, *Lepidium draba*, *Leucaena leucocephala*, *Montanoa hibiscifolia*, *Orobanche minor*, *Populus alba*, *Populus x canescens*, *Psidium x durbanensis*, *Schinus terebinthifolia*, *Senna didymobotrya*

Tanza Crouch: *Eugenia uniflora*, *Lilium formosanum*, *Plectranthus barbatus*

Wilma Roux: *Agave americana*, *Agave sisalana*, *Ageratum conyzoides*, *Anredera cordifolia*, *Atriplex inflata*, *Atriplex nummularia*, *Cabomba caroliniana*, *Campuloclinium macrocephalum*, *Cortaderia selloana*, *Cylindropuntia fulgida* var. *fulgida*, *Cylindropuntia imbricata*, *Eichhornia crassipes*, *Hydrilla verticillata*, *Melia azedarach*, *Opuntia aurantiaca*, *Opuntia stricta*, *Pinus canariensis*, *Pinus eliottii*, *Pinus halepensis*, *Pinus patula*, *Pinus pinaster*, *Pinus radiata*, *Pyracantha angustifolia*, *Pyracantha crenulata*, *Robinia pseudoacacia*, *Tecoma stans*, *Tithonia diversifolia*, *Tithonia rotundifolia*

Marietjie Steyn: *Acacia baileyana*, *Acacia implexa*, *Acacia mearnsii* (glands), *Acacia paradoxa*, *Acacia podalyriifolia*, *Ailanthus altissima*, *Alpinia zerumbet*, *Antigonon leptopus*, *Argemone ochroleuca*, *Aristolochia littoralis*, *Arundo donax*, *Bauhinia purpurea*, *Canna indica*, *Cardiospermum grandiflorum*, *Cardiospermum halicacabum*, *Cortaderia jubata*, *Dolichandra unguis-cati*, *Eucalyptus camaldulensis*, *E. cladocalyx*, *E. conferruminata*, *E. diversicolor*, *E. grandis*, *Gleditsia triacanthos*, *Ipomoea alba*, *Lonicera japonica*, *Malva arborea*, *Mimosa pigra*, *Morus alba*, *Myriophyllum spicatum*, *Nasturtium officinale*, *Oenothera*

biennis, *Parkinsonia aculeata*, *Parthenium hysterophorus*,
Pennisetum purpureum, *Phytolacca dioica*, *Pittosporum undulatum*, *Populus deltoides*,
P. nigra var *italica*, *Rivina humilis*, *Rubus cuneifolius*, *Rubus fruticosus*, *Schinus molle*,
Senna bicapsularis, *Senna corymbosa*, *S. didymobotrya*, *S. hirsuta*, *S. multiglandulosa*,
S. occidentalis, *S. pendula*, *S. septemtrionalis*, *Sorghum halepense*, *Sphagneticola*
trilobata, *Syzygium cumini*, *Tipuana tipu*, *Toxicodendron succedaneum*, *Trichocereus*
spachianus, *Triplaris americana*.

Most photos are by **Lesley Henderson** and the remainder by the SANBI personnel already mentioned and the following people whose names appear next to their photos:

Special thanks to **Geoff Nichols** who contributed photos of 83 species.

Rob Anderson, Tom Anderson, Joe Balciunas, Ignacio Barbara, Michail Belov, Richard Boon, Nollie Bosman, Ivan Boyd, Pat Breen, Paul Champion, Carina Cilliers, Krissie Clark, Francois de Wet, Lyn Fish, Sipke Gonggrijp, Niek Gremmen, Adriaan Grobler, John Hoffmann, John Hosking, Fiona Impson, Invasive Species South Africa (ISSA), Trevor James, Jesse Kalwij, Jan-Hendrik Keet, Hildegard Klein, Donovan Kotze, Louise Kritzinger, Volker Kummer, Peter le Roux, Vusi Lubisi, Grant Martin, Peter Meininger, Cliff Moran, Stefan Naser, Tessa Oliver, Lukas Otto, Petr Pyšek, RG & FJ Richardson, Willie Riemsma, Geoff Sainty, Ros Shepherd, Cedric Singo, Louise Stafford, Adrie van Heerden, Kasey Voges, Philip Weyl, Alan Wood, Helmuth Zimmermann.

The following photographers made their photos available through Wikimedia Commons:

P Clarke, Fibonacci, Christian Fischer, Jerzy Opiola, Pancrat, Sten, Thesurvived99, Samuelistok, Frank Vincentz.

Thanks to **Petros Ngwenya** and **Henry Hlela**, for providing some isiZulu names, and **Kanyisa Jama** for providing some isiXhosa names; **Graham** and **David Harding** for their contribution towards the chapter on 'Control'; **David Le Maitre** for his contribution towards the chapter on 'Impacts'; **Hildegard Klein** for information and advice on biological control; **Costas Zachariades** for providing the 2018 updated catalogue of biological control agents and their host plants, and **Philip Ivey** for comments on the manuscript.

Thanks to the sponsor who made this publication possible:

Department of Environment, Forestry and Fisheries of South Africa: Natural Resources Management Programmes (DEFF: NRMP)

Southern African Plant Invaders Atlas (SAPIA)

Many thanks to all SAPIA participants and assistants over the past three decades of this mapping project. Special thanks to **Pitta Joffe, Hildegard Klein** and **Lin Besaans** for their assistance with roadside surveys across the length and breadth of South Africa which have provided the bulk of the data in the SAPIA database

IMPACTS OF INVASIVE SPECIES

Alien plants have invaded nearly 80 000 km² of land in South Africa with well-known impacts on hydrology, nutrient cycling and fire regimes. Less well-studied are impacts on biodiversity, the economy and human society. Few studies have been done of the impacts of individual species but these enable us to predict the potential threats or impacts of other species and this has been done in this book.

Biodiversity:

- Reduced native species diversity.

Invasive alien species threaten the existence of native species through competition and displacement, through hybridization, and by altering water, nutrient and fire regimes.

The great majority of the species described in this book are invaders of natural and semi-natural habitats and are a threat to South Africa's unique, and very special native biodiversity. All the major natural vegetation types or biomes have been invaded by alien species with the most heavily invaded being the Fynbos (roughly coincident with The Cape Floral Kingdom), Savanna and Grassland.

Pompom weed,
Campuloclinium macrocephalum,
invading grassland.



Changes in species composition (e.g. *Acacia* invasion in fynbos) results in the loss of Proteaceae with canopy stored seed in regeneration after clearing; nitrogen enrichment favours alien species. Pine invasions have less severe but similar effects.

Rooikrans, *Acacia cyclops*,
invading coastal fynbos.



Water resources:

- Increased evapotranspiration by floating aquatics.

Water loss through evapotranspiration from a dense cover of water hyacinth, *Eichhornia crassipes*, may be three to seven times as much as from an open water surface.



- Increased evaporation leading to reduced water runoff in catchments and reduced water flow along rivers caused mainly by stands of woody species.

Dense black wattle (*Acacia mearnsii*) invasion is estimated to result in a 90–100% reduction in annual river flows. Riparian invasions use water in rivers and use can exceed the rainfall.



- Altered water quality due to litter and nutrient inputs and changed aquatic communities.
- Reduced water storage of wetlands, increased siltation, narrowing of water channels and flooding caused by reeds, willows and poplars.
- Disruption of water transport, irrigation and hydroelectricity generation by dense mats of submerged and floating aquatics.
- Damage to infrastructure during floods caused by dislodged trees and branches e.g. willows, poplars and acacias.

Giant reed, *Arundo donax*, narrows water channels.



Fire:

- Increased fire risk due to greater fuel load and flammability of invasive alien species, particularly acacias, pines and eucalypts, but also grasses and reeds.
- Increased risk of soil erosion due to water repellency and severe fires leaving only loose mineral soils.

Cluster pine, *Pinus pinaster*, forms highly flammable stands in fynbos.



Fountain grass, *Pennisetum setaceum*, increases the risk of fire in semi-arid karoo.



Soil erosion:

- Accelerated river bank erosion caused by stands of shallow-rooted woody species which do not stabilise the banks; dense canopies also shade out stabilising understorey vegetation.

River bank erosion.



- Coastal erosion caused by changes in sand dune dynamics by extensive stands of *Acacia cyclops* and *A. saligna*.

Agriculture:

- Reduced agricultural productivity through competition with crops.
- Reduced grazing capacity through altered rangeland species composition.
- Obstructed access to grazing and water.
- Economic losses due to poisoning and injuries to livestock.

Honey mesquite,
Prosopis glandulosa var. *torreyana*,
replacing grazing land in
the Northern Cape.



Human and animal health:

- Death and injuries caused by plants which are toxic, irritant or spiny.

Famine weed,
Parthenium hysterophorus,
outcompetes indigenous plants
and crops, and causes allergic
reactions in humans and animals.



Bongani Masehele

Toxicity and photosensitization
caused by consumption of lantana,
Lantana camara.



Mike Wells

- The creation of breeding sites for vectors of human and animal diseases, such as malaria, by mats of invasive aquatics.

Forestry:

- Reduced growth and productivity due to competition with invasive alien species.
- Obstructed access to plantations.

Invasion of pine plantations by bugweed, *Solanum mauritianum*.



Recreation:

- Obstructed access to waterbodies by mats of aquatics, reeds and other dense stands of invaders.
- Interference with water sports such as fishing and boating activities.

Invasion of the aquatic plant, water hyacinth, *Eichhornia crassipes*, at the Kleinfontein Dam, Benoni in Gauteng Province.



Tourism and aesthetics:

- Reduced eco-tourism revenue due to biodiversity loss and high visual impact of invasive alien species in conservation areas and places of scenic beauty.

Firethorn, *Pyracantha angustifolia*, invading grassland in the Free State.



INVASIVE STATUS

Most of the plants in this book invade and persist in natural or semi-natural habitats and are environmental weeds. Some species invade mainly sites of severe human disturbance and are classified as ruderal and agrestal weeds. Invasive status refers to the current status or potential status if this should differ. The categories of environmental weeds are the same as those used in the previous book 'Alien Weeds and Invasive Plants' by Henderson (2001), and after J.T. Swarbrick (Plant Protection Quarterly 6(4),1991).

Transformers

Plants which can as monospecies dominate or replace any canopy or subcanopy layer of a natural or semi-natural ecosystem, thereby altering its structure, integrity and functioning. Most of these species have been recorded in the SAPIA database as very abundant, forming extensive stands in one or more places. The most serious environmental weeds are in this category, which includes trees, aggressive climbers, thicket-forming shrubs and dense herbs.

Potential transformers

Plants that are invading natural or semi-natural habitats, and have the potential to dominate a vegetation layer but not yet having a marked effect. Most of these species are either transformers elsewhere in the world or are showing signs of this ability in South Africa. Most of these species have been recorded in the SAPIA database as abundant in natural or semi-natural habitats.

Special effect weeds

Plants which can as monospecies significantly degrade the value or purpose for which a natural or semi-natural ecosystem is valued without necessarily dominating it or greatly altering its vegetational structure or functioning. Examples include weeds which compete with and replace similar native plants, are of high visual impact, poisonous, or chemically irritate users of the area through allergens or stings.

Emerging weeds

Plants which are relatively new weeds and have emerged since the late 1990s. Some of these plants have been listed as category 1a under NEM:BA and have been targeted for eradication.

Ruderal and agrestal weeds

Mostly annual or biennial plants which are mainly weeds of waste places (ruderals) and cultivated lands (agrestals). They are only able to invade and persist in severely and recently disturbed areas. They scarcely invade or persist in established vegetation. Some species can invade natural or semi-natural habitats along watercourses which are subjected to periodic flooding (a natural disturbance).



Grey poplar, *Populus x canescens*: transformer in grassland.



Balloon vine, *Cardiospermum grandiflorum*:
transformer in forest.



Boxing-glove cactus, *Cylindropuntia fulgida* var. *mamillata*:
transformer in karoo. Photo taken prior to successful
biological control.

CONTROL METHODS

The success of any clearing operation depends on the correct selection of control methods. As there are many types of plants, the chosen method needs to take into account the different growth forms, growth habit and means of reproduction. Other factors to consider include the size of the area to be cleared, the size of the plant and the environment in which it occurs. Small, low density plants might easily be dug out, whereas larger trees may need special equipment and/or the use of herbicides.

When removing or limiting the spread of invasive plants, the control method needs to do the least amount of damage to the indigenous flora and fauna. Three methods of control are commonly implemented.

1) **Mechanical control.** This uses physical force to either remove the plant or damage it to such an extent that it dies. Techniques include digging out, bark stripping, ring barking or the use of fire. This method can only be used on plants that do not coppice (plants that do not regrow when cut back) or root sucker (regrow from the root buds).

2) **Chemical control.** This is the use of herbicides to kill plants. Herbicides are divided into many groups based on what plants they kill, when they are applied, their movement in the plant and their behaviour in the soil. Herbicides are usually applied directly to the plant as a foliar application or to the stump immediately after the tree has been felled. There is no one herbicide that can be used in all scenarios.

3) **Biological control.** This form of control uses the plants' natural enemies to help control the invasion. This method seldom results in total control of a species, but limits and contains the spread. Examples of biological control agents include seed feeders, stem borers and gall formers. Clearing an area may hamper any existing biological control efforts.

Since one method of control is not always effective, it is common to apply **integrated control**. This involves combining the control methods, such as cutting down a tree (mechanical) followed by applying herbicide (chemical). Biological control can sometimes also be integrated successfully with other control methods, for example where seeds are destroyed by biological control agents and standing plants are controlled mechanically and chemically. Biological control can also weaken plants to the point where other methods become more efficient and cost-effective.

Control plans must include provisions for follow up treatments. When designing a control plan, one must adhere to all the relevant Laws governing invasive plant control. Act 36 of 1947, stipulates that all management plans and subsequent clearing operations need to be carried out and supervised by a registered Pest Control Operator.

For more information the reader should consult the literature and addresses given under OTHER SOURCES OF INFORMATION.

MORE ABOUT BIOLOGICAL WEED CONTROL

Biological weed control is the use of natural enemies to reduce the vigour or reproductive potential of an invasive alien plant. The principle is that plants often become invasive when they are introduced to a new region without any of their natural enemies. The alien plants therefore gain a competitive advantage over the indigenous vegetation, because all indigenous plants have their own natural enemies that feed on them or cause them to develop diseases. Biological control is an attempt to introduce the alien plant's natural enemies to its new habitat, with the assumption that these natural enemies will remove the plant's competitive advantage until its vigour is reduced to a level comparable to that of the natural vegetation. Natural enemies that are used for biological control are called biological control agents.

The potential risk posed by a candidate biological control agent is determined by biological control researchers through extensive host range studies (specificity tests) that are carried out in a quarantine facility. These trials determine the range of plants that a potential biological control agent is able to use as host plants throughout its life cycle, as well as its host plant preferences. Permission to release a biological control agent will be sought only if the host-specificity tests prove without doubt that the potential agent is sufficiently host-specific for release in this country. To be regarded as sufficiently host-specific, the candidate agent must be either monophagous (i.e. the insect feeds on only one plant species, the target weed in this case) or it could have a slightly wider host range, provided that none of the additional host plants occur in South Africa or surrounding countries, either as indigenous or introduced crop plants.

South Africa is regarded as one of the world leaders in the field of biological control of invasive alien plants. Since 1913 a total of 34 invasive alien plant species have been brought under complete or substantial biological control by about 93 species or biotypes of insects, mites and pathogens. Remarkable successes have been achieved with either controlling or reducing the invasive potential of many invasive plants including cacti, aquatic weeds, Australian wattles, chromolaena and lantana. Seed feeders feature strongly in many of the projects. Tested and safe biological control agents are distributed by the ARC and Rhodes University in co-operation with Biodiversity Officers of the DEFF: Natural Resources Management Programmes (NRMP).



Seed-feeding beetle



Stem-boring moth



Gall-forming fly

GUIDE TO IDENTIFICATION OF THE SPECIES

See inside back cover for quick guide
 Grasses, Reeds and Grass-like Plants: pp 20–35
 Aquatic and Wetland Plants: pp 36–53
 Marine Plants: pp 54–55
 Herbs: pp 56–109
 Climbers and Scramblers: pp 110–133
 Trees and Shrubs: pp 134–305

EXAMPLE OF A SPECIES ACCOUNT

Trees & Shrubs Woody: leaves simple, long

Acacia cyclops
red eye

Description: Unarmed, evergreen, rounded shrub or small tree 1.5–4(–6) m high; low and wind-clipped at the coast. **Leaves:** Phyllodes, bright green, ~ straight, with 3–5 prominent longitudinal veins. **Flowers:** Bright yellow, globular heads, sporadic, Oct–Feb(–all year). **Fruits:** Pods, as broad as leaves, 8–12 mm wide, twisted, persisting after seeds shed; seeds encircled by double row of bright red or orange, fleshy stalks; pods often deformed (A) by an introduced midge. **Cultivated for:** Dune reclamation, shelter; provides firewood. **Invades:** Fynbos, forest gaps, dunes, roadsides, watercourses. **Origin:** SW Australia.

Acacia implexa
screw-pod wattle

Description: Unarmed, evergreen, small tree 3–15 m high, often suckering. **Leaves:** Phyllodes, greyish green, markedly curved, pendulous (more drooping and thinner than in *A. melanoxylon*), with several prominent longitudinal veins and fine net-veins between. **Flowers:** Pale yellow, globular heads, Dec–Mar. **Fruits:** Pods, long, narrow (to 25 x 0.4–0.7 cm), ~ straight when young, becoming strongly curved and twisted after dehiscence; seed with fleshy, white, seed stalk folded at one end but not encircling it. **Cultivated for:** Ornament, shade. **Invades:** Fynbos, watercourses. **Origin:** E Australia.

Family
FABACEAE

Legal status

Potential threat or impact

Biological control

Invasive status

T ☀️ 🌿 🌱 🌳 🌴 🌵

Pt 🌿 🌱 🌳 🌴 🌵

Botanical name
English common name

Description with important features underlined

Life form category

LEGAL STATUS

PE Prince Edward Isles only



NEMBA category 1a: Requiring immediate compulsory control



NEMBA category 1b: throughout South Africa/in part of South Africa
Must be controlled or eradicated where possible



NEMBA category 2: throughout South Africa/in part of South Africa
Allowed only in specified areas under controlled conditions



NEMBA category 3: throughout South Africa/in part of South Africa
Must be controlled within riparian areas; no further cultivation allowed

INVASIVE STATUS

T; Pt Transformer; Potential transformer

S; E; R Special effect weed; Emerging weed; Ruderal and agrestal

BIOLOGICAL CONTROL



Effective biological control agents available; control complete



Biological control agents available; control substantial



Biological control agents available; control negligible



Biological control agents available; control not determined or under evaluation

Degree of biological control after Klein (2011) and updated 2018

Complete: no other control measures are needed to reduce the weed to acceptable levels, at least in areas where the agents have been established

Substantial: other methods are needed to reduce the weed to acceptable levels, but less effort is required (e.g. less frequent herbicide application or less herbicide needed per unit area)

Negligible: in spite of damage inflicted by the agents, control of the weed remains entirely reliant on the implementation of the other control measures

Not determined: either the release of the agents has been too recent for the meaningful evaluation, or the programme has not been evaluated

POTENTIAL THREAT OR IMPACT



Biodiversity



Water resources



Fire



Soil erosion



Agriculture



Forestry



Human and animal health



Tourism, recreation

Grasses, Reeds & Grass-like Plants

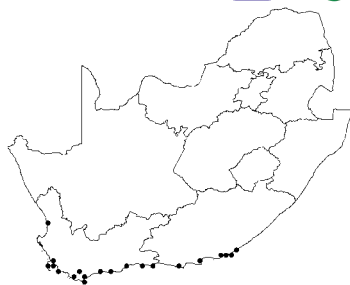


Ammophila arenaria

Marram grass

POACEAE

Description: Coarse, tufted, hairless, perennial grass 60–130 cm high, with deep, extensively creeping rhizomes. **Leaves:** Blade tough, expanded at first but soon tightly inrolled, sharp-pointed, smooth on the outer surface, prominently ridged within, to 75 cm long and 2.5 mm wide; ligule an unfringed membrane, conspicuous, up to 3 cm long. **Inflorescence:** Dense, spike-like, 12–20 cm long, pale green to straw-coloured, Oct–Dec. **Fruits:** Seeds; often sterile. **Cultivated for:** Sand-binding. **Invades:** Coastal dunes. **Origin:** Europe, N Africa, W Asia.

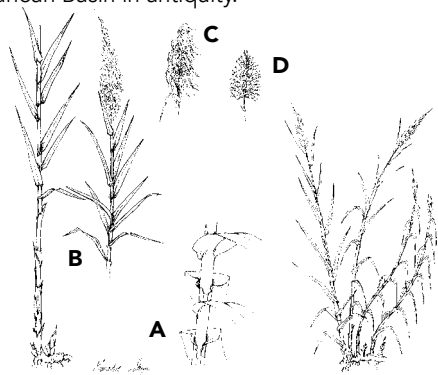
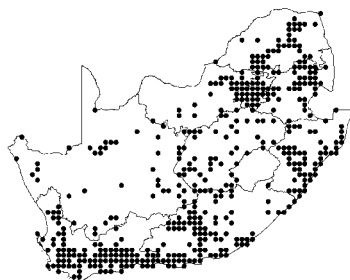


Arundo donax

giant reed

POACEAE

Description: Robust reed 2–6 m high, spreading from short rhizomes. **Leaves:** Up to 70 cm long and 8 cm wide; leaf tips soft or firm, not rigid and penetrating (like *Phragmites mauritianus*); leaf blades with large, basal ear-like lobes (A); leaf sheaths persistent on stem. **Inflorescence:** Compact, spear-shaped (B), 30–60 cm long, late summer, rarely flowering on highveld. Compare with indigenous *P. mauritianus* (C) and *P. australis* (D). **Fruits:** None. **Cultivated for:** Ornament, screening. **Invades:** Watercourses; often occurs on roadsides and other sites away from water. **Origin:** Asia (Middle East) and probably introduced to the Mediterranean Basin in antiquity.





Photos: Lyn Fish





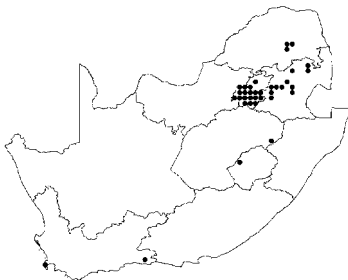
Cortaderia jubata

Pampas grass, purple Pampas

POACEAE

Description: Robust tussock grass to 3 m across, flowering stalks to 3 m high. **Leaves:** Bright green, to 150 cm x 12 mm, reflexed, tips not bristle-like, blade flat to slightly v-shaped in cross-section, margins rough, cutting; mostly basal to half the height of the flowering stalks.

Inflorescence: Yellowish or purple, loosely branching, 60–80 cm long; old inflorescence remains a dark or yellowish colour, Nov–Feb. **Fruits:** Seeds. **Cultivated for:** Ornament, mine dump stabilization. **Invades:** Grassland, roadsides, rivers, wasteland. **Origin:** S America. **Irritant:** Respiratory (flowers), skin (abrasive leaves).



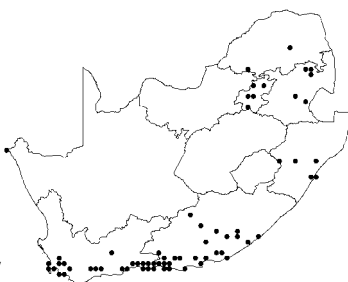
Cortaderia selloana

Pampas grass, silwergras

POACEAE

Description: Robust tussock grass to 3.5 m across, flowering stalks to 4 m high. **Leaves:** Greyish or bluish green, to 180 cm x 10 mm, reflexed; tips narrowly tapering, bristle-like; blade often v-shaped in cross-section; margins rough, ~ cutting; mostly basal to two-thirds the height of flowering stalks. **Inflorescence:** Silvery white to pink or mauve, stiffly branching, 40–70 cm long; old inflorescence appears white, Feb–Apr.

Fruits: Seeds. **Cultivated for:** Ornament, mine dump stabilization. **Invades:** Riverbanks, seasonally wet habitats. **Origin:** S America. **Irritant:** Respiratory (flowers), skin (abrasive leaves).



Glyceria maxima

reed meadow grass, reed sweet grass

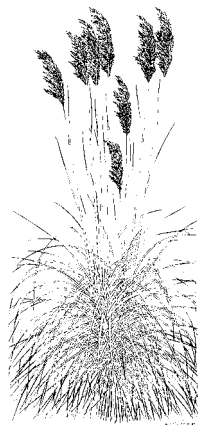
POACEAE

Description: Perennial, rhizomatous, tall, leafy grass, with an unbranched erect stem 1–2.5 m high, growing in, and adjacent to, aquatic habitats. **Leaves:** Bright green, sometimes tinged red; blade up to 1.6 cm wide; ligule an unfringed membrane (as opposed to ligule of fringed hairs in *Phragmites* spp.). **Inflorescence:** Panicle, 15–45 x 15 cm; distinguished from *Phragmites* spp. by larger and non-silky/fluffy spikelets; spring–summer. **Fruits:** Seed. **Cultivated for:** Fodder. **Invades:** Rivers, streams, dams, wetlands. **Origin:** Europe, Asia. **Poisonous:** Sometimes causes prussic acid poisoning in cattle.





Lukas Otto



Donovan Kotze



Grasses, Reeds & Grass-like Plants



Nassella tenuissima

white tussock

POACEAE

Description: Compact, tufted, perennial grass up to 1 m high; tussocks do not collapse untidily and are distinctly white in winter. **Leaves:** Fine, tightly rolled, ~ rough to the touch; ligule membranous, ~2 mm long, without a ring or tuft of hairs. **Inflorescence:** Slender, compact, 10–30 cm long, ~ included in the tuft, Jan. **Fruits:** Seeds (**A**), each held in symmetric bracts; a single bent and twisted awn to 8 cm long arises centrally from the seed; awns often become entangled forming dense “rat’s nests”. **Invades:** Mountain grassland. **Origin:** S USA, Mexico, Argentina, Chile. **Irritant:** Skin (seed awns).

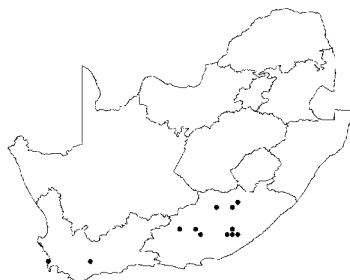


Nassella trichotoma

nassella tussock

POACEAE

Description: Densely tufted, perennial grass to 60 cm high; mature tussocks droop and appear as though they have been lain on. **Leaves:** Fine, tightly rolled, harsh to touch downwards; ligule membranous, ~1.5 mm long, without a ring or tuft of hairs. **Inflorescence:** Open, loosely branching, at maturity standing well clear of the leaves, but soon detaching; Aug–Jan. **Fruits:** Seeds (**A**), held in purplish, asymmetric bracts; a single ~ straight awn 20–30 mm long arises laterally from each seed. **Invades:** Mountain grasslands, old and degraded lands. **Origin:** Argentina, Uruguay. **Irritant:** Skin (seed awns).



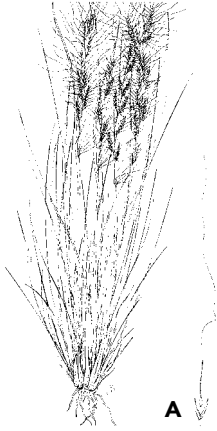
Paspalum quadrifarium

tussock paspalum

POACEAE

Description: Coarse, perennial, tussock-forming, rhizomatous grass to 2 m high, spreading rapidly and forming dense stands. **Leaves:** Bluish green, sheaths shortly hairy, blades hairless and up to 60 cm long and 6 mm wide. **Inflorescence:** Brown to rust, often tinged purple, 12–30 cm long with 15–25(–40) branched (racemes) in a narrowly-pyramidal branching pattern; spikelets almost hairless or shortly hairy; spring–autumn. **Fruits:** Seeds. **Cultivated for:** Ornament. **Invades:** Moist sites, roadsides, watercourses, valleys, gaps between plantations. **Origin:** Brazil, Argentina.





Mike Wells



Mike Wells



Francois de Wet



Grasses, Reeds & Grass-like Plants



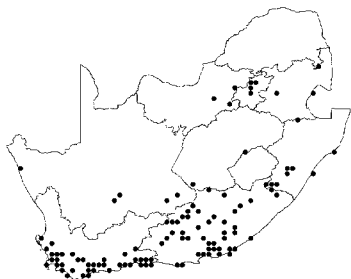
Pennisetum clandestinum

Kikuyu grass

POACEAE

Description: Robust, mat-forming, perennial grass, creeping by rhizomes and stolons, 30–60(–120) cm high.

Leaves: Bright green, smooth or shortly hairy, folded at first then expanded. **Inflorescence:** Partly hidden in uppermost leaf sheaths; only white or silvery, feathery stigmas or anthers visible; Aug–Apr. **Fruits:** Seeds; often not setting seed. **Cultivated for:** Sand-binding, fodder, lawns. **Invades:** Roadsides, urban open spaces, riverbanks, wetlands. **Origin:** Tropical E, NE and C Africa. **NB:** NEM:BA category 1b in protected areas and wetlands in which it does not already occur. Not listed elsewhere.



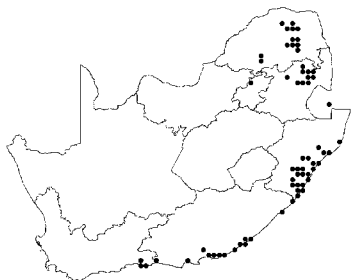
Pennisetum purpureum

elephant or Napier grass

POACEAE

Description: Robust, perennial, tufted grass forming bamboo-like clumps 2–4(–7.5) m high. **Leaves:** Light green to yellowish, blades to 120 x 1–3 cm, margins thickened and spiny. **Inflorescence:** Yellow-brown, rarely purplish, dense, spike-like, to 30 cm long; bristles numerous, in clusters around the spikelets, one in every cluster stouter and much longer than the rest, 2–2.5 cm or longer; bristles detach with the spikelets (*Setaria* species: bristles remain on inflorescence); Oct–Jun.

Fruits: Seeds. **Cultivated for:** Screening, ornament, fodder. **Invades:** Forest margins, riverbanks, valley floors. **Origin:** Tropical Africa.



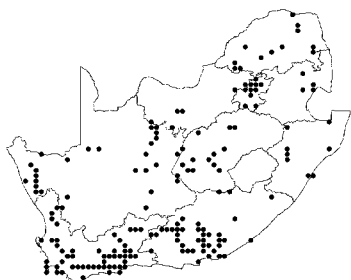
Pennisetum setaceum

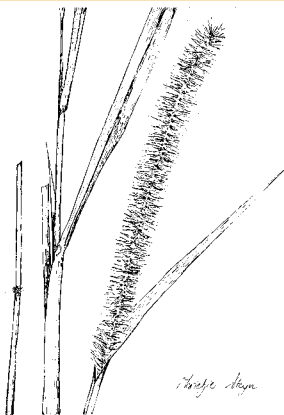
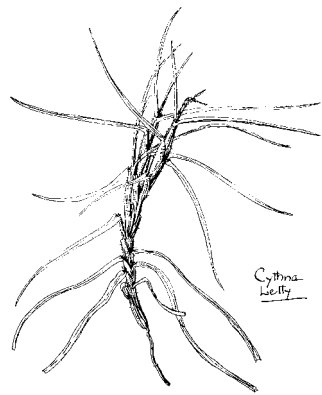
fountain grass

POACEAE

Description: Tussock-forming perennial 60–100 cm high with a bristly, spike-like inflorescence; the bristles long and detaching with the spikelets. **Leaves:** Up to 40 cm long and 3 mm wide, not rigid or ending in sharp points. **Inflorescence:** Cylindrical, 10–25 cm long, usually purple or rose-coloured; bristles \pm 2 cm long, only inner bristles feathery; bristles detach with the spikelets (*Setaria* species: bristles remain on inflorescence); Nov–Jul.

Fruits: Seeds. **Cultivated for:** Ornament, sand-binding. **Invades:** Grassland, savanna, karoo, roadsides, railsides, stony slopes, drainage lines. **Origin:** N and NE Africa, SW Asia.





Grasses, Reeds & Grass-like Plants

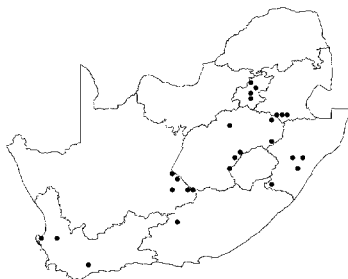


Pennisetum villosum

feathertop

POACEAE

Description: Sparsely branching, tufted, creeping perennial 20–90 cm high; inflorescence bristly, spike-like; bristles long and detaching with the spikelets. **Leaves:** Up to 15 cm long and 6 mm wide, not rigid or ending in sharp points. **Inflorescence:** Ovoid, 4–7(–11) cm long and almost as wide, white or light brown; bristles ± 3 cm long, usually all feathery (plumose); bristles detach with the spikelets (*Setaria* species: bristles remain on inflorescence); Jan–May. **Fruits:** Seeds. **Cultivated for:** Ornament. **Invades:** Grassland, roadsides, disturbed sites; prefers cold, wet areas. **Origin:** Ethiopia.

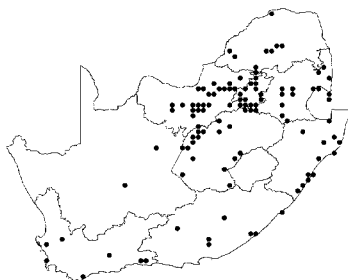


Sorghum halepense

Johnson grass, Aleppo grass

POACEAE

Description: Tall, leafy, perennial grass to 3 m high, with extensive system of branched rhizomes (A); stems (B) stout and erect; nodes without spreading white hairs (as in *S. versicolor*). **Leaves:** Hairless, to 60 x 1–3 cm; ligule of stiff hairs. **Inflorescence:** Large, open, reddish brown, nodding panicle (C) to 40 cm long; spikelets paired (D), one stalkless, the other stalked and longer; stalkless spikelets variously coloured at maturity (black in *S. versicolor*); Nov–Apr. **Fruits:** Seeds. **Cultivated for:** Fodder. **Invades:** Agricultural lands, roadsides, grassland, riverbanks. **Origin:** Mediterranean. **Poisonous:** Wilted foliage.

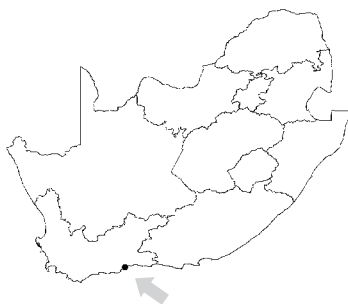


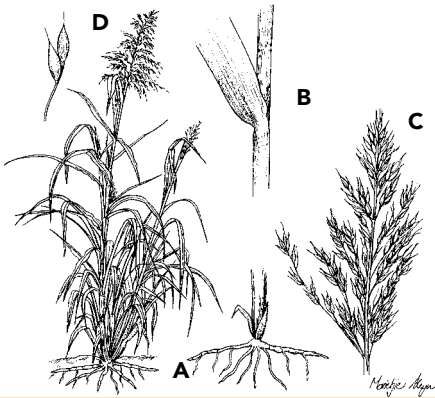
Spartina alterniflora

smooth cordgrass, salt-water cordgrass

POACEAE

Description: Perennial, rhizomatous grass with stiff, erect stems up to 1.5 m high; forming colonies in salt-water tidal flats and marshes. **Leaves:** Blades to 60 x 1.5 cm, flattened, with margins rolled inwards, almost cylindrical and pointed at the tips, ligule with stiff hairs, sheaths smooth. **Inflorescence:** Spike-like, to 40 cm long, mostly closed with 5–20 branches pressed to the axis; spikelets in 2 rows, on branch-undersides, late summer–autumn. **Fruits:** Seeds. **Invades:** Groot Brak estuary between Mossel Bay and George. **Origin:** N America (Atlantic coast).





Ernita van Wyk



Agrostis castellana

bent grass

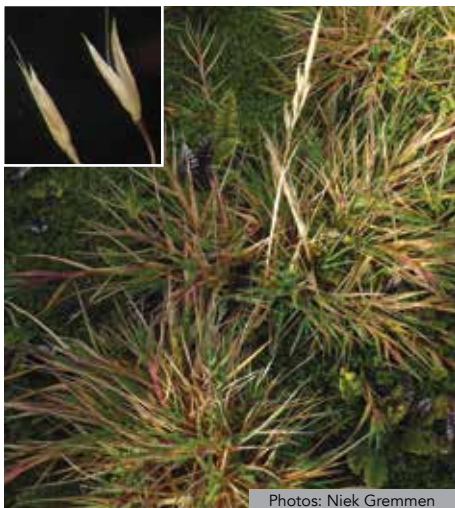
POACEAE

Description: Perennial, loosely tufted grass 30–80 cm high; rhizomes short, usually to 10 cm long; stolons absent. **Leaves:** Blades 4–10 cm long, 1–3 mm wide, flat or rolled inwards; ligule an unfringed membrane 0.5–3 mm long, and shorter than wide.

Inflorescence: Panicle, loose, somewhat lax, 10–30 x 3–8 cm; spikelets yellowish green or brownish, with a purple tinge; summer.

Fruits: Seeds. **Cultivated for:** Lawns.

Invades: Wet and dry, disturbed sites (sub-Antarctic islands). **Origin:** Europe, N Africa, Asia. **NB:** Differs from *A. gigantea* and *A. stolonifera* in having shorter ligules and in not possessing extensive rhizomes and stolons. Differs from *A. stolonifera* by having awns on some spikelets.



Photos: Niek Gremmen

Agrostis gigantea

black bent grass, redtop

POACEAE

Description: Perennial grass with stems ascending or decumbent, 40–120 cm long, rooting from the lower nodes; rhizomes to 25 cm long; stolons absent. **Leaves:** Green or bluish green; blade flat, 5–20 cm long, 2–8 mm wide; ligule an unfringed membrane, up to 6 mm long, and longer than wide.

Inflorescence: Panicle, spreading, 8–25 x 3–15 cm, branches reddish; spikelets silvery red; summer. **Fruits:** Seeds. **Cultivated for:**

Forage, lawns, erosion control. **Invades:** Wet and dry, disturbed sites (M, KZN, EC, WC, sub-Antarctic islands). **Origin:** Europe, Asia.

Irritant: Respiratory tract (pollen). **NB:** *A. stolonifera* differs by having stolons and a more compact panicle.



Photos: Niek Gremmen

Agrostis stolonifera

creeping bent grass

POACEAE

Description: Perennial grass with stems ascending or decumbent, 8–60 cm long, rooting from the lower nodes; rhizomes absent; stolons up to 1 m long or more. **Leaves:** Green or bluish green; blade 2–10 cm long, 2–6 mm wide, flat; ligule an unfringed membrane, up to 7 mm long, and longer than wide. **Inflorescence:** Panicle, compact, 3–20 x 0.5–3 cm; spikelets green to purplish; summer. **Fruits:** Seeds. **Cultivated for:** Forage, lawns, erosion control. **Invades:** Wet and dry, disturbed sites, particularly streambanks (sub-Antarctic islands). **Origin:** Europe, N Africa, Asia. **Irritant:** Respiratory tract (pollen). **NB:** *A. gigantea* differs by having rhizomes and a more open panicle.



Niek Gremmen

Alopecurus geniculatus

marsh or water foxtail

POACEAE

Description: Perennial, tufted grass; stems decumbent to ascending, 1.5–45 cm long, rooting from the lower nodes. **Leaves:** Green to bluish or greyish green; blade 2–12 cm long, 2–7 mm wide, flat, slightly rough; ligule an unfringed membrane, blunt, 2–5 mm long. **Inflorescence:** Panicle, dense, spike-like, 1.5–7 cm long, 3–7 mm wide, silky hairy, green to purplish, spring. **Fruits:** Seeds. **Cultivated for:** Forage. **Invades:** Wetlands and other moist sites (sub-Antarctic islands). **Origin:** Europe, N Africa, Asia.



Niek Gremmen

Grasses, Reeds & Grass-like Plants



Avena spp.

wild oats

POACEAE

Description: Annual grasses, stems solitary or tufted, 25–160 cm high. **Leaves:** Blades up to 50 x 1.5 cm; ligule an unfringed membrane. **Inflorescence:** Panicle, large, drooping; spikelets large 2–3.5 cm or longer, drooping and compressed laterally; glumes longer than the florets, papery, shining; central awn straight or twisted, up to 6 cm or longer; Aug–Dec. **Fruits:** Seeds. **Cultivated for:** Ornament, cereal crop (*A. sativa*). **Invades:** Wasteland, disturbed sites, roadsides, drainage lines, sandy soils; natural veld in fynbos, succulent karoo, savanna (all SA provinces). **Origin:** Europe, N Africa, W Asia. **Naturalised species:** *A. barbata*, *A. byzantina*, *A. fatua*, *A. sterilis* and *A. sativa* (also a commercial cereal crop). **Irritant:** Skin (seed awns).



Lyn Fish

Bromus spp.

bromes

POACEAE

Description: Annual or short-lived perennials; stems tufted, to 1 m high. **Leaves:** Blades to 40 cm long, 8 mm wide; ligule an unfringed membrane. **Inflorescence:** Panicle, open or contracted (dense), drooping or erect; spikelets large 1–3.5 cm or longer, compressed laterally; glumes shorter than florets; awns <0.3–7 cm long; Aug–Apr. **Fruits:** Seeds. **Cultivated for:** Fodder, erosion control. **Invades:** Wasteland, roadsides, croplands; natural veld in fynbos, karoo, grassland and savanna biomes (all SA provinces). **Origin:** Europe, N Africa, W Asia, S America. **Prominent species:** *B. catharticus*, *B. commutatus*, *B. diandrus*, *B. hordeaceus*. **Irritant:** Skin (seed awns).



Lyn Fish

Elymus repens (= *Elytrigia repens*)
couch grass

POACEAE

Description: Perennial grass; stems solitary or tufted, erect, 30–120 cm tall; rhizomes much-branched, elongated, yellowish white, sharp-pointed, slightly fleshy. **Leaves:** Dull green, blades flat, 6–30 cm long, 3–10 mm wide, stiff to firm; leaf apex pointed, hardened; leaf base with ear-like lobes; ligule an unfringed membrane, 0.3–1 mm long. **Inflorescence:** Single spike 10–30 cm long; spikelets solitary, 1–2 cm long, stalkless (fertile); awns absent or to 1 cm long; Dec–Mar. **Fruits:** Seeds. **Cultivated for:** Forage, fodder; used medicinally. **Invades:** Cultivated lands, gardens, waste places (EC, WC, sub-Antarctic islands). **Origin:** Europe, N Africa, Asia. **NB:** Distinguished from *Lolium* spp. by light-coloured rhizomes ending in sharp points.



Festuca rubra

red fescue, creeping red fescue

POACEAE

Description: Perennial grass, stems solitary or tufted in loose clumps, erect or ascending, slender, straight, unbranching, 15–90 cm long; rhizomes absent or short, fleshy. **Leaves:** Bright green, blade very narrow, rolled inwards, 3–40 cm long, 0.5–1(–2) mm wide; ligule an unfringed membrane, blunt, very short, 0.2 mm long. **Inflorescence:** Panicle, 3–17 cm long, sparsely branched; spikelets long, narrow, pointed, 5–14 mm long, with 4–10 florets per spikelet; spring–summer. **Fruits:** Seeds. **Cultivated for:** Lawns, erosion control. **Invades:** Grassland, sea cliffs, marshes (sub-Antarctic islands). **Origin:** Europe, N Africa, Asia, N America.



Grasses, Reeds & Grass-like Plants



Lolium spp.

rye grasses

POACEAE

Description: Annual or short-lived, perennial grasses; stems tufted or solitary, 20–80(–130) cm high. **Leaves:** Blades flat to 30 cm long, 10 mm wide; leaf sheaths with basal ear-like lobes; ligule an unfringed membrane.

Inflorescence: Single spike; spikelets solitary, stalkless, laterally flattened; awns absent or to 2 cm long; Sep–Apr. **Fruits:** Seed.

Cultivated for: Fodder. **Invades:** Roadsides, cultivated and fallow lands, disturbed sites, moist sites, stream edges (all SA provinces).

Origin: Europe. **Poisonous:** Sometimes lethally toxic to livestock. **Naturalised species:** *L. multiflorum*, *L. perenne*, *L. rigidum*, *L. temulentum* and *L.x hybridum*.

Irritant: Respiratory tract (pollen).



Lyn Fish

Luzula multiflora

woodrush

JUNCACEAE

Description: Perennial, tufted, grass-like herb 10–40 cm high; stem round, solid.

Leaves: Pale to mid green, mainly basal with 2 or 3 along the stem; sheath closed, with a tuft of hairs at the throat; blade linear-lanceolate, flat, 3.5–12 cm long, 2–6 mm wide; margin with long, white hairs; apex with a thickened, callus-like tip. **Inflorescence:** Pale brown to reddish brown, with dense clusters of flowers at tips of flowering stems; each flower has 6 scale-like segments 2–4 mm long; spring.

Fruits: Capsules, globose, ± 2 mm long, with ± 3 seeds. **Invades:** Grassland, wet and dry habitats (sub-Antarctic islands). **Origin:** Europe, N Africa, Asia, N America.



Photos: Niek Gremmen

Grasses, Reeds & Grass-like Plants



Poa pratensis

Kentucky bluegrass

POACEAE



Description: Perennial, tufted, mat-forming grass, 10–120 cm high; rhizomes long and wiry. **Leaves:** Green or bluish green; mostly basal; blades 5–30 cm long, 2–4 mm wide; smooth or slightly rough; leaf tip abruptly tapered and boat-shaped; ligule an unfringed, truncate membrane, 1–3 mm long. **Inflorescence:** Panicle, open-pyramidal in shape, erect or slightly lax, 2–20 x 1–12 cm; spikelets bluish green to purple; lemma keel and margins densely hairy; Sept–Jan(–Apr). **Fruits:** Seeds. **Cultivated for:** Forage, fodder, erosion control, lawns. **Invades:** Grasslands, moist and shady sites (G, FS, M, KZN, EC, WC, sub-Antarctic islands). **Origin:** Europe, N Africa, Asia, N America.



Sasa ramosa

dwarf yellow-striped bamboo

POACEAE



Description: Perennial, rhizomatous, dwarf bamboo; stems rounded, shiny, bright green, woody, 1–2 m high and 4–8 mm in diameter, with a single branch per node. **Leaves:** Medium green with yellow midribs, blade 17–25 x 2.5–3.5 cm, hairy; leaf-blade base with a brief stalk-like connection to sheath; leaf sheaths papery, dry, persistent on stem. **Inflorescence:** Panicle, open, oblong, to 10 cm long, at intervals of many years. **Fruits:** Seeds. **Cultivated for:** Ornament, groundcover. **Potentially invasive:** Spreads vigorously from plantings; prefers moist sites, sun or shade. **Origin:** Japan.



Aquatic & Wetland Plants

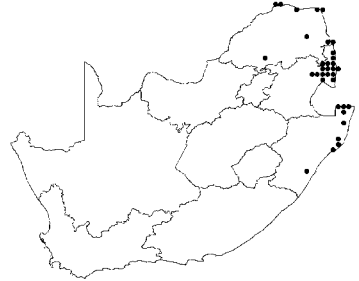


Azolla cristata (= *A. microphylla*)

tropical red water fern

SALVINIACEAE

Description: Perennial, mat-forming, free-floating, aquatic fern with horizontal stems to 1.5 cm long; leaves overlapping; similar to *A. filiculoides* but smaller and roots with conspicuous root caps. **Leaves:** Green to blue-green to dark red, 0.7–0.9 mm long, broadly ovate to ~ circular; apices rounded or blunt. **Fruiting bodies:** Minute, in axils of leaves. **Cultivated for:** Ornament. **Invades:** Dams, rivers, vleis; prefers tropical areas such as the lowveld of Mpumalanga, Limpopo and coastal KwaZulu-Natal. **Origin:** Tropical America. **NB:** Provides habitats for agents of diseases.

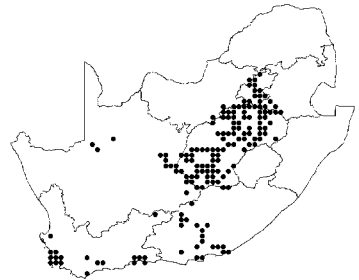


Azolla filiculoides

red water fern

SALVINIACEAE

Description: Perennial, mat-forming, free-floating fern with horizontal stems to 3.5 cm long; leaves overlapping, branching irregular (plant ~ circular in outline); roots without fine lateral hairs; root tips often coiled (and without conspicuous root caps as in *A. pinnata* subsp. *africana* and *A. cristata*). **Leaves:** Silvery green turning reddish brown in winter, 1–1.5 mm long, broadly ovate to ~ circular; apices rounded or blunt. **Fruiting bodies:** In axils of leaves. **Cultivated for:** Ornament. **Invades:** Dams, rivers, vleis; prefers temperate areas; map predates biocontrol. **Origin:** S America. **NB:** Provides habitats for agents of diseases.

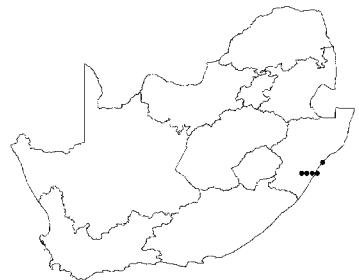


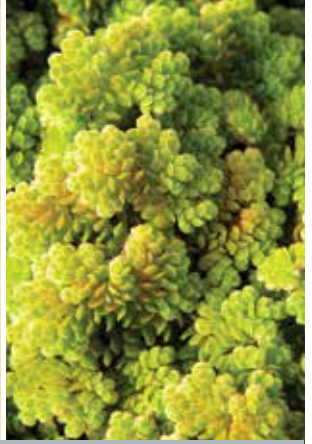
Azolla pinnata* subsp. *asiatica

Asian mosquito fern

SALVINIACEAE

Description: Perennial, mat-forming, free-floating fern with horizontal stems to 4 cm long; branching regularly pinnate, compact (plant appearing triangular or trapezoid in outline); roots with many fine lateral rootlets. **Leaves:** Dull reddish brown or green, ovate to oblong-triangular, bluntly pointed. **Fruiting bodies:** Minute, in axils of leaves. **Cultivated for:** Ornament, fertilizer. **Invades:** Dams, rivers. **Origin:** Asia. **NB** Distinguished from *A. pinnata* subsp. *africana* by dorsal leaves that are only closely overlapping towards the branch tips and a narrow transparent leaf margin. **NB:** Provides habitats for agents of diseases.





Photos: Philip Weyl



A. pinnata subsp. *asiatica*

A. pinnata subsp. *africana*



Paul Champion



Philip Weyl

Aquatic & Wetland Plants



Cabomba caroliniana

Carolina fanwort, cabomba

CABOMBACEAE

Description: Rooted, submerged, perennial, aquatic herb with branching stems to 2 m or longer. **Leaves:** Green, fan-like (A), submerged, arranged oppositely or in whorls, \pm 5 cm across, repeatedly branched (compare with *Myriophyllum aquaticum* and *M. spicatum*); floating leaves few, ovate to elliptic, usually associated with flowering. **Flowers:** Solitary (B), white to pinkish, yellow-centred, with 6 'petals' (3 petals and 3 sepals), emergent above water surface, 1–2 cm across, summer. **Fruits:** Indehiscent follicles. **Cultivated for:** Ornament. **Potentially invasive:** In slow-flowing rivers, dams and lakes. **Origin:** Temperate and subtropical S America. **NB:** Indigenous *Ceratophyllum demersum*, water hornwort, is similar, with whorled, branched submerged leaves, but the branches have toothed margins; flowers are inconspicuous in the leaf axils.

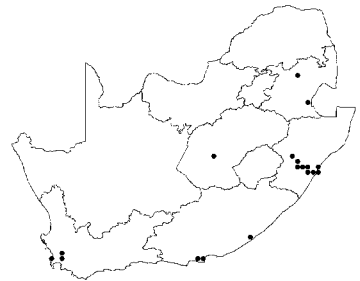


Egeria densa

dense water weed

HYDROCHARITACEAE

Description: Submerged, aquatic herb with slender stems up to 1.5 m long. **Leaves:** Green, finely toothed, densely clustered towards ends of branches, 1.5–3 cm long, in whorls of 4–5, sometimes 3–8; leaf-tips end in 1 spine-cell (A). **Flowers:** White, 3-petalled, \pm 15 mm across, long-stalked, exerted 2 cm above water surface, late spring and autumn. **Fruits:** None seen; propagation by stem fragmentation. **Cultivated for:** Ornament. **Invades:** Still or slow-moving water in lakes and ponds. **Origin:** S America. **NB:** Leaves of *Lagarosiphon* spp. strongly to slightly recurved, and leaf-tips ending in 2 spine-cells.

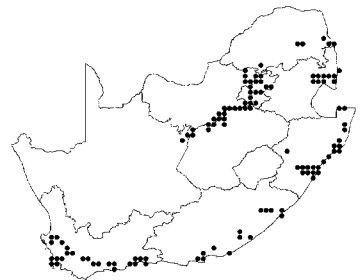


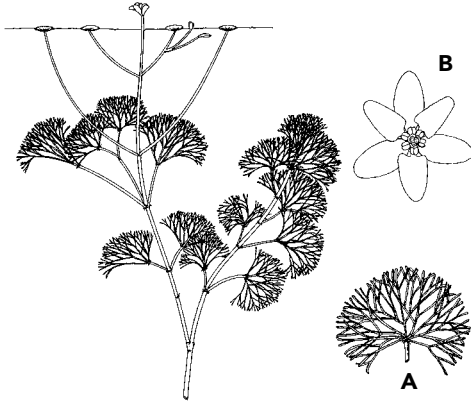
Eichhornia crassipes

water hyacinth

PONTEDERIACEAE

Description: Perennial, aquatic herb, free-floating or anchored in shallow water, usually 10–20 cm high but up to 1 m when growing in dense mats; roots of floating plants long and feathery. **Leaves:** Shiny, dark green, in rosettes, erect with distinctive, swollen, bladder-like stalks. **Flowers:** Pale violet or blue, in 8–10 flowered spikes; each flower measuring about 5 cm across; upper petal with a prominent dark blue, yellow-centred patch; Nov–Apr. **Fruits:** Capsules with very fine seed. **Cultivated for:** Ornament. **Invades:** Dams, slow-flowing rivers. **Origin:** Tropical S America. **NB:** Provides habitats for agents of diseases.



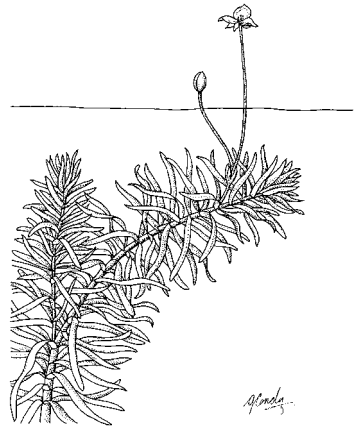


Tom Anderson



Geoff Nichols

Carina Cilliers



Aquatic & Wetland Plants



Elodea canadensis

Canadian water weed

HYDROCHARITACEAE

Description: Submerged, aquatic herb with slender stems up to 3 m long. **Leaves:** Green, finely toothed, 0.5–1.5 cm long, usually in whorls of 3, rarely 4; leaf-tips end in 1 spine-cell. **Flowers:** Transparent, 3-petalled, 3–5 mm across, on long, thread-like stalks; floating on water surface. **Fruits:** None seen; propagation by stem fragmentation. **Cultivated for:** Ornament, aquarium trade. **Invades:** Still or slow-moving water in lakes and ponds. **Origin:** Canada and USA. **NB:** Leaves of *Lagarosiphon* spp. spirally arranged (except *L. verticillifolius*, in whorls), strongly to slightly recurved, and leaf-tips ending in 2 spine-cells.



Hydrilla verticillata

hydrilla

HYDROCHARITACEAE

Description: Submerged, rooted, aquatic herb with stems to 7 m long. **Leaves:** Green, margins coarsely toothed; teeth visible to naked eye (A); leaf tips end in 1 spine-cell (2 spine-cells in *Lagarosiphon*); usually 12 x 2 mm, in whorls of 3–8. **Flowers:** Tiny, 3 mm across, on long stalks, floating on water surface, summer. **Fruits:** Capsules; propagation also by specialized buds (turions) (B) produced at leaf axils and tips of underground shoots ('tubers') (C). **Cultivated for:** Aquarium trade. **Origin:** Tropical Asia. **Invades:** Jozini Dam, Pongola River in KZN. **NB:** Substantial control provided by the adventive Asian hydrilla moth.



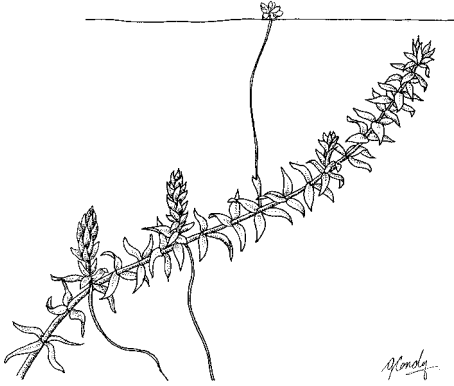
Lythrum salicaria

purple loosestrife

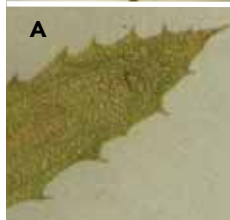
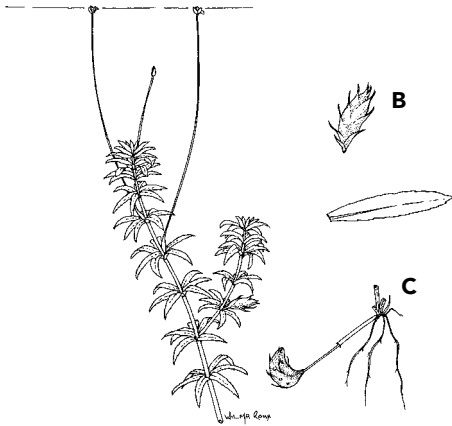
LYTHRACEAE

Description: Erect, shortly-hairy, perennial herb with showy spikes of rose-purple flowers; stems stout, 4-angled, unbranched, up to 2 m high from a rootstock; spreads by rhizomes to form dense stands. **Leaves:** Stalkless, half-clasping the stem, lanceolate, mostly opposite or in whorls of 3. **Flowers:** Rose-purple, 1–1.5 cm across, in axillary whorls and forming a dense spike 15–25 cm long; flowering in summer. **Fruits:** Capsules 5 mm long. **Cultivated for:** Ornament. **Invades:** Moist sites, watercourses; to date only known from the Liesbeek River, Cape Town. **Origin:** Europe, Asia.





Carina Cilliers



Joe Balciunas



Ernita van Wyk

Aquatic & Wetland Plants

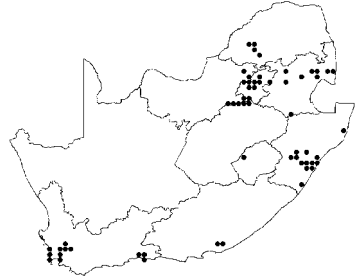


Myriophyllum aquaticum

parrot's feather

HALORAGACEAE

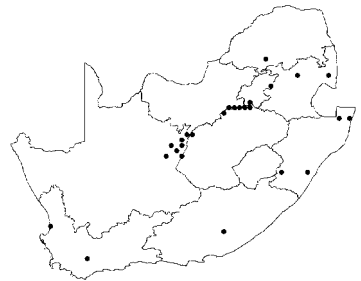
Description: Rooted, aquatic herb with terminal, leafy shoots emerging 20–50 cm above the water surface; stems to 3 m long; long roots arise from nodes on the stems. **Leaves:** Pale green, finely divided, unbranched, feather-like, in whorls of 4–6. **Flowers:** Cream, 1.2 mm long, inconspicuous, solitary in axils of the leaves; only female plants known in southern Africa; May–Sep. **Fruits:** None; propagation occurs from stem fragmentation. **Cultivated for:** Ornament. **Invades:** Still or slow-moving water on banks of rivers, lakes and ponds. **Origin:** S America. **NB:** Provides habitats for agents of diseases.



Myriophyllum spicatum, spiked water milfoil, is usually completely submerged except for the leafless flowering shoots, and flowers are arranged in whorls on emergent spikes 5–10 cm long.

Recent DNA studies have shown that South African and European plants are distinct but share a common ancestor. The South African plants have been isolated from Europe for a very long time and are most likely a native component of the flora.

NB: *M. spicatum* should be removed from the list of invasive species in NEM:BA. North American and Eurasian plants of *M. spicatum* should be prevented from entering South Africa.

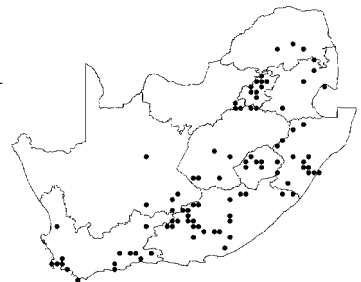


Nasturtium officinale

watercress

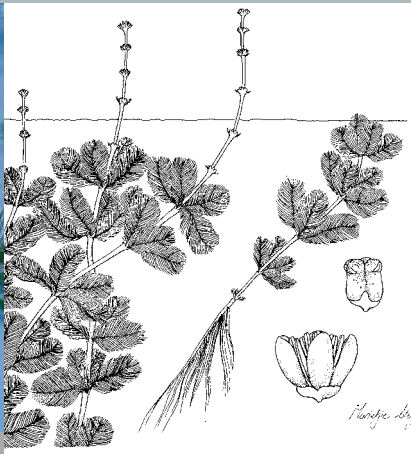
BRASSICACEAE

Description: Perennial, aquatic herb with erect, creeping or floating, hollow stems up to 1 m long, rooting at the nodes, and mat-forming. **Leaves:** Bright green, pinnate with 3–11 leaflets, terminal leaflet often larger than the laterals; margins entire, somewhat fleshy. **Flowers:** White (A), 5 mm long, in terminal, elongated racemes, Sep–Mar. **Fruits:** Brown, linear-cylindrical, 2-valved **(B)**, curved upwards, with a short, beak-like tip. **Cultivated for:** Food i.e. salads and garnishing. **Invades:** Rivers, riverbanks, wetlands. **Origin:** Europe. **NB:** Indigenous species have toothed or deeply divided leaves (pinnatisect) and yellow flowers.

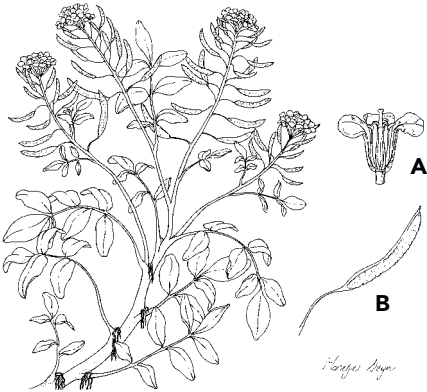




Mike Wells



Pongas alpinus



Pongas alpinus



Aquatic & Wetland Plants



Nymphaea mexicana

yellow water lily

NYMPHAEACEAE

Description: Perennial, rooted, aquatic herb with floating leaves; rhizomes vertical, stout, knobbly, connected by thick, pale, horizontal stolons. **Leaves:** Upper surface green; lower surface green or pinkish with reddish blotches; leaf margins may be wavy. **Flowers:** Fragrant, 8–18 cm across, petals bright yellow, pointed (pale yellow, rounded in cultivars), sepals greenish brown, stamens golden, spring–autumn. **Fruits:** None. **Cultivated for:** Ornament. **Invades:** Rivers, dams. **Origin:** S USA, Mexico. **NB:** Provides habitats for agents of diseases; most invasive yellow water lilies are cultivars; indigenous species do not have yellow flowers.

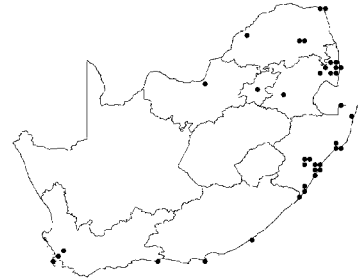


Pistia stratiotes

water lettuce

ARACEAE

Description: Perennial, mat-forming, usually free-floating aquatic herb, seldom exceeding 15–20 cm in diameter; plants consist of a rosette of leaves with a tuft of long, fibrous roots beneath, resembling floating lettuces. **Leaves:** Pale yellow-green, ribbed, with many longitudinal veins radiating from the base, softly hairy on both surfaces. **Flowers:** Pale green or white, inconspicuous, Feb–May(–all year). **Fruits:** Small capsules. **Cultivated for:** Ornament. **Invades:** Rivers, dams, pans. **Origin:** S America. **Poisonous & irritant:** Intense internal irritation (leaves). **NB:** Provides habitats for agents of diseases.

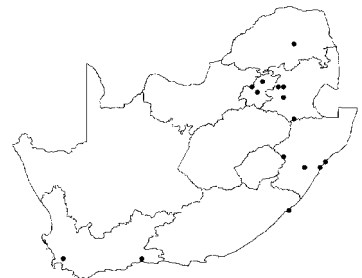


Pontederia cordata

pickerel weed

PONTEDERIACEAE

Description: Perennial, rooted, aquatic herb 1–2 m high, with erect, emergent stems and leaves; spreads by horizontal rhizomes, forming colonies. **Leaves:** Light or yellowish green, one per stem, cordate (heart-shaped), ovate or lanceolate, up to 23 x 7 cm. **Flowers:** Blue, in spikes 5–15 cm long, each flower ± 15 mm long, upper petal with yellow blotch in centre, Sep–Jun. **Fruits:** None seen in South Africa; apparently sterile. **Cultivated for:** Ornament. **Invades:** Riverbanks, drainage lines, edges of dams, irrigated cane fields. **Origin:** N, C and S America.





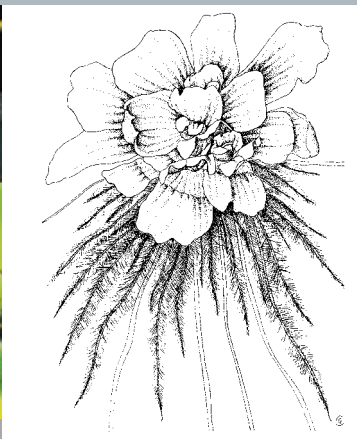
Vusi Lubisi



Louise Stafford



Carina Cilliers



Geoff Nichols



Aquatic & Wetland Plants

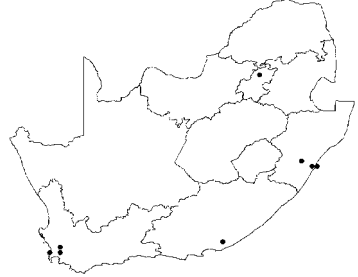


Sagittaria platyphylla

delta arrowhead, slender arrowhead

ALISMATACEAE

Description: Perennial, rooted, aquatic herb to 1.5 m high with creeping stolons; corms present, roots septate. **Leaves:** Submersed leaves translucent, narrow, strap-like, to 50 cm long; emergent leaves with stalk ~ triangular in cross-section, to 70 cm long; blade narrow to broadly ovate, to 28 x 10 cm. **Flowers:** White, 3-petaled, upper flowers male, lower female, to 2(–3) cm across; inflorescence erect, always below leaf height, with 2–12 whorls of flowers, summer–autumn. **Fruits:** Achenes, flattened, winged. **Cultivated for:** Ornament, aquariums, ponds. **Invasives:** Wetlands, streams. **Origin:** N and C America.



Salvinia minima

small salvinia

SALVINIACEAE

Description: Perennial, mat-forming, free-floating fern with horizontal stems about 6 cm long. **Leaves:** Green, round to elliptic, 8–15 mm wide, in pairs; unwettable and velvety due to a dense, upper-surface cover of stiff hairs, with 4 separated branches (i.e. not fused at their tips) (A); modified root-like leaves hang down in the water. **Fruiting bodies:** Occasionally fertile; propagates from stem fragmentation. **Cultivated for:** Ornament. **Invasives:** Slow-moving water in rivers and dams; first detected at Hartbeespoort Dam, NW Province in December 2011. **Origin:** Mexico, C and S America. **NB:** Provides habitats for agents of diseases.

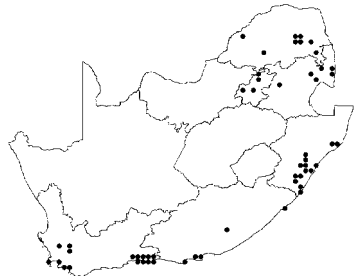


Salvinia molesta

salvinia

SALVINIACEAE

Description: Perennial, mat-forming, free-floating fern with horizontal stems 6–25 cm long. **Leaves:** Green to yellow-green, oval, 1–6 cm wide, in pairs; unwettable and velvety due to a dense, upper-surface cover of hairs (A) ending in cage-like structures; very modified, feathery, root-like leaves hang down in the water. **Fruiting bodies:** Sterile; propagates from stem fragmentation. **Cultivated for:** Ornament. **Invasives:** Slow-moving water in rivers and dams. **Origin:** S America. **NB:** Provides habitats for agents of diseases.

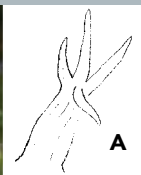




Chris Willis



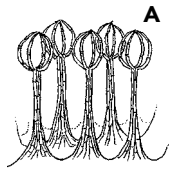
René Glen



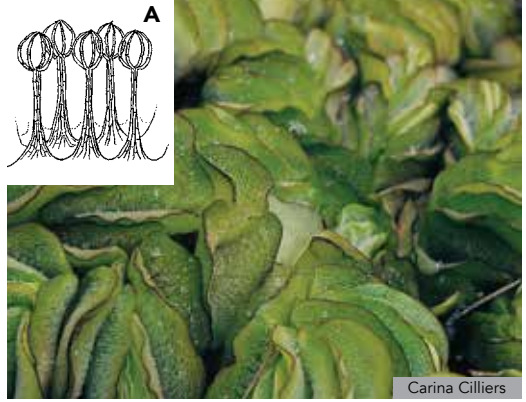
A



Carina Cilliers



A



Carina Cilliers

Aquatic & Wetland Plants



Alisma plantago-aquatica

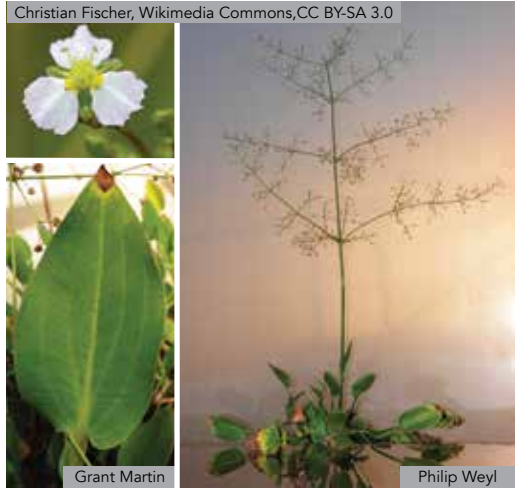
mud plantain

ALISMATACEAE

Description: Large, stoloniferous, rooted, aquatic herb to 1 m high.

Leaves: Large, with blades ovate, 10–25 x 6–10 cm, with rounded or heart-shaped bases and 5–7 prominent longitudinal veins; stalk to 80 cm long, flattened on one side and with small wings at base. **Flowers:** White or pink, 3-petalled, bisexual, 1 cm across, clustered at the tips of whorled branches; inflorescence branched, up to 60 x 40 cm, above the leaves, spring–summer. **Fruits:** Achenes. **Invades:** Slow-flowing rivers, lakes, dams, swamps (G, FS, KZN, EC).

Origin: Uncertain; widespread in northern hemisphere.



Colocasia esculenta

elephant's-ear, taro, madumbe

ARACEAE

Description: Perennial herb up to 1.5 m high; thick shoots arise from a large underground corm; spreads horizontally by slender stolons. **Leaves:** Dark green and velvety above, heart- to arrowhead-shaped, peltate (stalked from back of blade); blades up to 60 x 50 cm; stalks up to 1 m long or more. **Flowers:** Tiny, green to creamy white, on a fleshy stalk 9–15 cm long, enfolded by a yellow bract (spathe) 20–45 cm long, summer. **Fruits:** Berries. **Cultivated for:** Food, ornament. **Invades:** Rivers, streams (L, M, KZN, EC, WC). **Origin:** Probably tropical Asia. **Poisonous:** Whole plant uncooked. **NB:** *Alocasia macrorrhizos*, giant taro, has non-peltate leaves i.e. stalked from the base.



Duchesnea indica

wild strawberry

ROSACEAE

Description: Perennial, low-growing, mat-forming herb with prostrate, hairy stems (stolons) rooting at the nodes.

Leaves: Bright green, paler below, shortly hairy, 3-foliolate, on stalks 3–8 cm long, leaflets ovate to elliptic, margins with rounded teeth. **Flowers:** Bright yellow, solitary on long stalks, about 15 mm across, with 5 petals and 5 sepals, spring–summer. **Fruits:** Red, fleshy berry, up to 1.2 cm long, similar to the commercial strawberry but less juicy and bland in taste. **Cultivated for:** Ornament. **Invades:** Moist sites, streambanks, edges of ponds (G, NW, M, KZN, EC). **Origin:** E and S Asia.



Geoff Nichols

Echinodorus cordifolius

creeping burhead, radican's sword

ALISMATACEAE

Description: Large, perennial, rhizomatous, aquatic herb up to 1 m high; roots not septate. **Leaves:** Submersed leaves mostly absent; emergent leaves with long stalks up to 45 cm long and 5–6 ridged; blades broadly ovate, up to 20 x 10 cm, with 3–5(–9) longitudinal veins and heart-shaped bases. **Flowers:** White, 3-petalled, bisexual, 1.2–2.5 cm wide; inflorescence decumbent or arching, up to 1 m long, with 3–9 whorls, each with 3–15 flowers; often rooting at the nodes; summer–autumn. **Fruits:** Achenes, plump, 3–4 ribbed. **Cultivated for:** Ornament in aquariums and ponds. **Potentially invasive:** Rivers, lakes, dams. **Origin:** N, C and S America, W Indies.



Photos: Grant Martin

Aquatic & Wetland Plants

Helanthemum tenellum (= *Echinodorus tenellus*)

Amazon swordplant

ALISMATACEAE

Description: Small, stoloniferous, rooted, aquatic herb; roots not septate; often < 15 cm high but up to 25 cm high. **Leaves:** Submerged leaves mostly present, to 10 cm long, linear; emergent leaves linear-lanceolate with stalks 4–5 ridged and 1–10 cm long; blade 1–7 cm long, 2–5 mm wide, base gradually narrowing into the stalk. **Flowers:** White, 3-petalled, bisexual, 6–8 mm wide; inflorescence umbellate, with 1–2 whorls of 4–6 flowers on stalk 3–10 cm high (above leaves); summer–autumn. **Fruits:** Achenes, plump, ridged. **Cultivated for:** Ornament. **Potentially invasive:** Slow-moving water in rivers and dams. **Origin:** N, C and S America, W Indies.



NL Britton & A Brown, Public Domain, via Wikimedia Commons

Hydrocleys nymphoides

water poppy

ALISMATACEAE

Description: Perennial, stoloniferous, rooted, aquatic herb with floating leaves like a water lily. **Leaves:** Thick, shiny, dark green, almost round, heart-shaped at the base, to 5–7(–12) cm across; stalks segmented. **Flowers:** Yellow with reddish brown centres, showy, 5 cm across, 3-petalled, emergent above the water, summer–autumn. **Fruits:** Follicles, cylindrical, beaked, about 1.5 cm long. **Cultivated for:** Ornament. **Invades:** Shallow water on the margins of dams and lakes (KZN: Cedara, Howick). **Origin:** C and S America, W Indies.



Carina Cilliers

Iris pseudacorus

yellow flag

IRIDACEAE

Description: Perennial, rhizomatous, clump-forming, aquatic herb up to 1 m high, sometimes forming floating mats. **Leaves:** Green to blue-green, erect with upper part arching, flattened with a raised midrib, lanceolate, to 1 m long and 3 cm wide. **Flowers:** Yellow, showy, large, with 3 narrow and 3 broad, petal-like lobes up to 7.5 x 4 cm; flowering stalks 4–12 flowered; Oct–Nov. **Fruits:** Glossy green, 3-angled capsules, 4–8 cm long. **Cultivated for:** Ornament. **Invades:** Riverbanks, drainage lines, edges of dams (G, L, M, KZN, EC, WC). **Origin:** Europe, N Africa, Asia. **Poisonous:** All parts, especially rhizomes. **Irritant:** Skin (sap).



Carina Cilliers

Ludwigia peruviana

Peruvian primrosebush

ONAGRACEAE

Description: Robust, perennial, terrestrial or partially submerged shrub up to 4 m high; stems much-branched and densely velvety; forms dense stands, sometimes sprawling into the water and forming floating islands of vegetation. **Leaves:** Green, shortly hairy, alternate, broadly lanceolate, elliptic or ovate, 5–12(–45) x 1–3 cm. **Flowers:** Yellow, solitary, axillary, usually 4-petalled, petals 1–4 cm long and wide, mid-summer. **Fruits:** Erect, obconical, 4-angled capsules. **Cultivated for:** Ornament. **Potentially invasive:** Riverbanks, streams, wetlands. **Origin:** C and S America. **NB:** Indigenous *L. octovalvis* has narrowly cylindrical, ribbed capsules.



Geoff Sainty



Lythrum hyssopifolia

Hyssop loosestrife

LYTHRACEAE

Description: Subwoody, perennial or annual herb up to 50 cm high; stems simple or branched, erect or nearly prostrate, somewhat angled. **Leaves:** Pale glaucous-green, hairless, usually alternate, stalkless, linear to oblong, 5–25 x 2–8 mm. **Flowers:** Pink or purple, solitary, in upper leaf axils, 6–10 mm long, spring–summer. **Fruits:** Erect, 4-angled, dehiscent capsules. **Not cultivated:** Seed contaminant. **Invasives:** Moist, disturbed sites (NW, EC, WC). **Origin:** Europe. **Poisonous:** Lethal to sheep.



Photos: Pieter Winter

Marsilea mutica

nardoo, Australian water-clover

MARSILEACEAE

Description: Semi-aquatic fern with a creeping, much-branched, ~ hairless rhizome. **Leaves (fronds):** Clover-like with 4 broadly fan-shaped leaflets; shiny green, ~ hairless, 2-toned, lighter in the centre with a characteristic yellowish marking and darker towards the margins, often with a brown band separating the colour zones; stipe (stalk) 5–30 cm long or up to 1 m; land leaves up to 3 cm wide and floating leaves up to 6 cm wide. **Fruiting bodies (sori):** In groups of 2–4; stalks 1–2 cm long, branched 1–3 times, arising at or near base of stipe; body globose, lacking teeth. **Cultivated for:** Ornament. **Potentially invasive:** Banks of lakes and ponds. **Origin:** Australia.



Ros Shepherd

Nuphar lutea

yellow pond lily, yellow water lily

NYMPHAEACEAE

Description: Perennial, rooted, aquatic herb with floating leaves and emergent flowers; rhizomes stout, creeping, 3–8 cm thick. **Leaves:** Floating leaves leathery, shiny green, up to 40 x 30 cm, heart-shaped with a deep sinus, on long stalks. **Flowers:** Yellow, unpleasant-smelling, spherical, 4–6 cm across with 5 broadly ovate, petal-like sepals, 2–3 cm long; the inner sepals yellow and outer sepals green; petals numerous, yellow, much smaller than sepals, 7–10 mm long, spoon-shaped; on long stalks; summer. **Fruits:** Berry-like, flask-shaped, 3–6 cm long. **Cultivated for:** Ornament. **Potentially invasive:** Dams, ponds. **Origin:** Europe, N Africa, Asia.



Photos: Adrie van Heerden

Nymphoides peltata

fringed water lily

MENYANTHACEAE

Description: Perennial, rooted, aquatic herb with floating leaves and emergent flowers; spreads rapidly from stolons that lie just beneath the water surface. **Leaves:** Shiny green, heart- to almost circular-shaped, 3–10 cm across, on long stalks, margins slightly wavy and shallowly scalloped. **Flowers:** Yellow, 5-petalled, petal margins fringed, 3–4 cm across, on long stalks, summer. **Fruits:** Capsules. **Cultivated for:** Ornament. **Invades:** Dams (KZN: Umgeni, Karkloof). **Origin:** Europe, Asia. **NB:** Similar to the indigenous *N. thunbergiana* but does not produce roots at base of the flower clusters; petals broader and overlapping.



Willie Riemsma



Asparagopsis armata

harpoon weed

FLORIDEOPHYCEAE

Description: Marine, subtidal, red alga, up to 30 cm tall, with two distinct phases during its life cycle. The asexual phase is 1–3 cm across, consisting of rosy-pink tufts of fine, irregularly branched filaments; the sexual phase is larger, up to 30 cm long and bright purple-red; bare creeping stolons at the base give rise to pyramidal uprights of bushy branchlets which spiral in pairs up the main axis which is ± 1 mm wide; the branchlets taper into harpoon-like barbs (not smooth as in *A. taxiformis*). **Invades:** Subtidal zones to depths of 30 m, occasionally in deeper pools; attaching to rocky substrates or other algae or floating freely (EC, WC). **Harvested for/ Uses:** Cosmetic and food industries.

Origin: Pacific Ocean (Australia, New Zealand).



Photos: Ignacio Barbara

Asparagopsis taxiformis

pleasing seaweed, limu kohu

FLORIDEOPHYCEAE

Description: Marine, subtidal, red alga, up to 30 cm tall, with two distinct phases during its life cycle. The asexual phase is 1–3 cm across, consisting of rosy-pink tufts of fine, irregularly branched filaments; the sexual phase is larger, up to 30 cm long and bright purple-red; bare creeping stolons at the base give rise to pyramidal uprights of bushy branchlets which spiral in pairs up the main axis which is ± 1 mm wide; the branchlets taper into smooth tips (not hooks as in *A. armata*). **Invades:** Subtidal zones to depths of 30 m, favouring reef edges with constant water motion; attaching to rocky substrates or other algae or floating freely (KZN, WC). **Harvested for:** Flavourant of meat and fish dishes. **Origin:** Pacific Ocean (Australia, New Zealand, Hawaii).



Photos: Rob Anderson

Asparagopsis armata



Ignacio Barbara

Schimmelmannia elegans

red alga

GLOIOSIPHONACEAE

Description: Marine, intertidal to subtidal, red alga; possibly with two distinct phases in its life cycle. Asexual phase possibly crustose (rock-like); sexual phase up to 1.2 m tall, thallus soft but not gelatinous, deep wine-red, with several axes developing from a crustose holdfast; axes strongly compressed in middle and apical parts, but ~ cylindrical towards the base; branching pinnate or bipinnate; primary branches (pinnae) lanceolate, 2–5 mm long. **Invades:** Ocean to depths of 10 m; first detected in kelp tank at Two Oceans Aquarium in Cape Town; also occurring in harbour above maximum water level under constant flowing water (WC). **Origin:** Sub-Antarctic Islands (Tristan da Cunha and Nightingale Island).



Rob Anderson

Herbs: succulent



Bryophyllum delagoense (= *Kalanchoe tubiflora*)

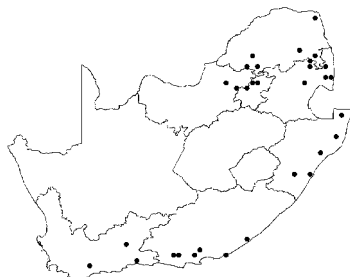
chandelier plant, mother of millions

CRASSULACEAE

Description: Perennial, erect, hairless, succulent herb or shrublet 20–120 cm high; reproducing rapidly by plantlets at leaf tips and from seed. **Leaves:** Cylindric, grey-green and mottled with darker green to reddish spots, ~ leafless at flowering time, apex with 2–9 teeth producing plantlets in their axils. **Flowers:** Pale orange to magenta, 3–4cm long, pendent, in clusters up to 15 cm wide, Jun–Jul. **Fruits:** Follicles.



Geoff Nichols



Cultivated for: Ornament. **Invades:** Hot and dry rocky ridges; savanna, urban open spaces. **Origin:** Madagascar. **Poisonous:** Extremely poisonous to livestock causing paralysis and death (the staggers/ krimpsiekte).

Bryophyllum pinnatum (= *Kalanchoe pinnata*)

cathedral bells

CRASSULACEAE

Description: Perennial, erect, hairless, succulent herb or shrublet to 1.5 m high; stem purple with green flecks, slightly woody; reproducing rapidly by plantlets at leaf tips and from seed. **Leaves:** Green, simple at base of plant, becoming 3–5 foliolate on the upper parts; margin scalloped, purple in colour; producing numerous small plantlets in leaf notches. **Flowers:** Bell-like, pendulous, 3–4 cm long, calyx green or reddish, corolla reddish and corolla lobes slightly recurved, in terminal clusters up to 15 cm wide, Jun–Jul.



Geoff Nichols



Fruits: Follicles. **Cultivated for:** Ornament. **Invades:** Coastal grassland and urban open spaces. **Origin:** Madagascar. **Poisonous.**



Geoff Nichols



Geoff Nichols

Herbs: succulent



Bryophyllum proliferum (= *Kalanchoe prolifera*)
green mother of millions

CRASSULACEAE

Description: Perennial, erect, hairless, succulent herb or shrublet up to 2 m high; stem erect, 4-angled. **Leaves:** Green, simple but deeply divided into segments 3–5 cm long. **Flowers:** Box-shaped, pendulous, less than 3 cm long, calyx green, corolla green or reddish; adventitious plantlets are produced on the mature inflorescence—flowers being replaced by a proliferation of plantlets; Jun–Jul. **Fruits:** Follicles. **Cultivated for:** Ornament. **Invades:** Disturbed forest and urban open spaces. **Origin:** Madagascar. **Poisonous.**



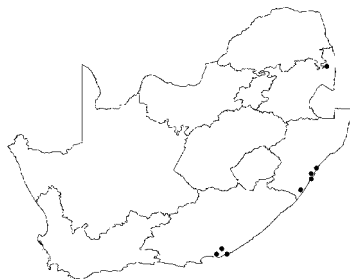
NB: All *Bryophyllum* species are toxic. The following species are cultivated in South Africa and are potentially invasive:
B. daigremontianum,
B. fedtschenkoi and
B. gastonis-bonnieri.

Callisia repens

creeping inch plant

COMMELINACEAE

Description: Perennial, mat-forming, succulent herb; stems prostrate, slender, rooting at the nodes, ascending when flowering. **Leaves:** Green, blade small, ovate to lanceolate, 1–4 x 1–2 cm, leaf margins minutely hairy, base clasping, apex pointed; 2-ranked, becoming smaller towards tips of flowering stems; the common clone in cultivation is very compact in habit, leaves spotted with purple above and purple beneath. **Flowers:** White, stalkless, in leaf axils at ends of flowering stems; petals narrow, colourless, 3–6 mm long; stigma brush-like, stamens long-exserted, spring–autumn. **Fruits:** Capsules.



Cultivated for: Ornament as a groundcover. **Invades:** Forest understories, roadsides, watercourses, disturbed sites around habitation. **Origin:** Tropical America.



Geoff Nichols



Geoff Nichols



Shade form of *Callisia repens*

Herbs: spiny

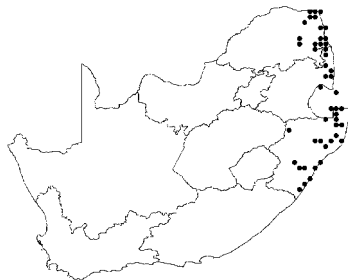


Argemone mexicana

yellow-flowered Mexican poppy

PAPAVERACEAE

Description: Annual, very spiny herb up to 1 m high; latex yellow. **Leaves:** Green, with prominent white veins, spiny, up to 15 x 6 cm. **Flowers:** Bright yellow, up to 5 cm across, Sep–Jan. **Fruits:** Spiny capsules, ovoid, up to 3.6 x 1.8 cm, splitting into 5 lobes and releasing numerous, small, black seeds. **Invades:** Disturbed sites, cultivated lands, riverbanks, riverbeds; confined to KwaZulu-Natal, lowveld of Mpumalanga and Limpopo. **Origin:** Mexico. **Poisonous:** All parts, including seeds. **Irritant:** Skin (sap, spines).

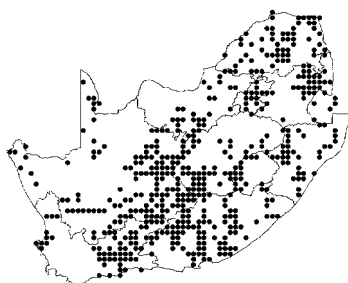


Argemone ochroleuca

white-flowered Mexican poppy

PAPAVERACEAE

Description: Annual, very spiny herb up to 1 m high; latex yellow. **Leaves:** Grey or bluish green, with prominent white veins, spiny, up to 15 x 6 cm. **Flowers:** Pale yellow or creamy-white, up to 5 cm across, Sep–Jan. **Fruits:** Spiny capsules, oblong, up to 4.5 x 1.8 cm, splitting into 5 lobes and releasing numerous, small, black seeds. **Invades:** Disturbed sites, wasteland, cultivated lands, riverbanks, riverbeds; widespread. **Origin:** Mexico. **Poisonous:** All parts, including seeds. **Irritant:** Skin (sap, spines).



Carduus nutans

nodding thistle

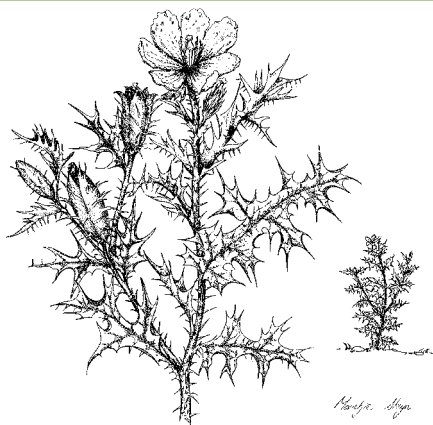
ASTERACEAE

Description: Spiny, much-branched, annual or biennial herb up to 2 m high; stems with green and white, vertical stripes and spiny wings; wing spines 2–10 mm long; often forms impenetrable stands. **Leaves:** Dark green, lobes ending in spines, basal leaves 10–40 cm long, stem leaves shorter. **Flowers:** Pink, disk-shaped heads 2–7 cm across, singly or in clusters, on stalks 2–30 cm long, often nodding; bracts broad, flattened, spine-tipped; late spring–summer. **Fruits:** Achenes, tufted with silky hairs ~ 2 cm long. **Invades:** Roadsides, disturbed and overgrazed sites; cultivated and fallow lands. **Origin:** Europe, N Africa, Asia. **Irritant:** Skin (spines).





Geoff Nichols



Geoff Nichols



Herbs: spiny

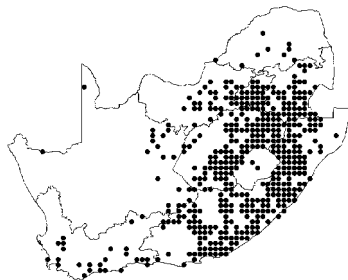


Cirsium vulgare

spear thistle

ASTERACEAE

Description: Spiny, much-branched biennial herb up to 1.5 m high; stems with spiny wings; forming dense stands in overgrazed and highly disturbed sites. **Leaves:** Dark green with stiff hairs above, white woolly beneath, deeply lobed, the lobes ending in strong spines. **Flowers:** Pink to mauve, in heads to 5 x 5 cm, surrounded by spiny bracts, Sep–Apr. **Fruits:** Achenes (A), tufted with silky hairs 2 cm long. **Use:** Honey source. **Invades:** Grassland, roadsides, old lands, vlei and dam margins, riverbanks. **Origin:** Europe, N Africa, Asia. **Irritant:** Skin (sap); dermatitis in humans and physical injury to animals.

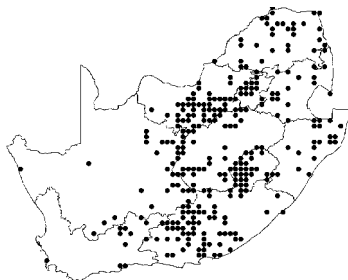


Datura ferox

large thorn apple

SOLANACEAE

Description: Erect, annual herb up to 1.5 m high; stems sparsely hairy to hairless. **Leaves:** Dark green, to 20 cm long, sparsely hairy, margins coarsely toothed or lobed, veins prominent, bad-smelling. **Flowers:** White, solitary, narrowly funnel-shaped, to 6.5 cm long, Oct–Mar. **Fruits:** Brown, hardened capsules (A), ~ erect, to 7 x 6 cm, covered with stout, spreading spines to 3 cm long. **Invades:** Wasteland, cultivated lands, roadsides, riverbanks, riverbeds. **Origin:** Probably tropical America. **Poisonous:** Whole plant, seeds. **Irritant:** Skin (leaves, flowers, fruits).

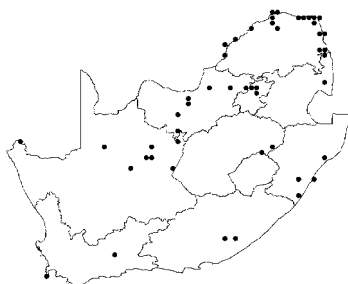


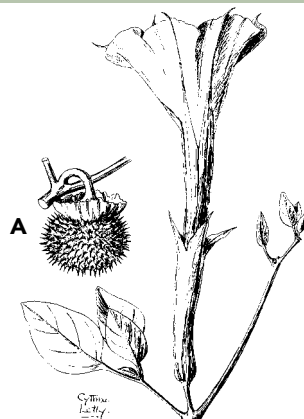
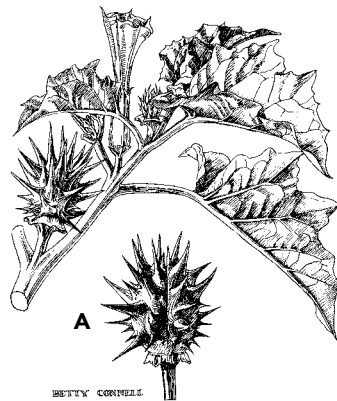
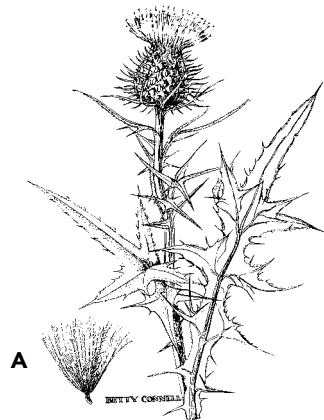
Datura innoxia

downy thorn apple

SOLANACEAE

Description: Bushy herb up to 2 m high, softly grey-velvety on all parts. **Leaves:** Grey-velvety turning dark green, to 20 cm long, veins prominent, margins entire to shallowly toothed, bad-smelling. **Flowers:** White, solitary, large, to 20 x 12 cm, funnel-shaped, Jul–Oct(–all year). **Fruits:** Brown, hardened capsules (A), reflexed (nodding), globose, to 5 cm long, densely covered with slender spines to 1 cm long. **Cultivated for:** Ornament. **Invades:** Riverbeds, roadsides, edges of dams, cultivated lands. **Origin:** SW USA, Mexico. **Poisonous:** Whole plant, seeds. **Irritant:** Skin (leaves, flowers, fruit).





Herbs: spiny

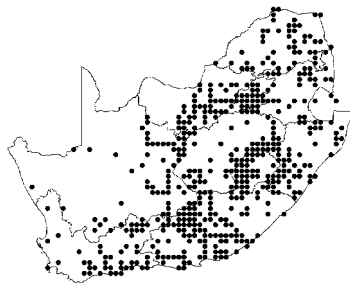
Datura stramonium

common thorn apple

Description: Erect, annual herb up to 1.5 m high; stems sparsely hairy to hairless. **Leaves:** Dark green or purple, to 20 cm long, sparsely hairy, veins prominent, margins coarsely toothed or lobed, bad-smelling. **Flowers:** White, mauve or purplish, narrowly funnel-shaped to 10cm long, Oct–Mar(–all year). **Fruits:** Brown, hardened capsules, ~ erect, ovoid, to 5 x 3 cm, covered with slender spines to 1 cm long. **Invades:** Wasteland, cultivated lands, roadsides, riverbanks, riverbeds. **Origin:** Tropical America. **Poisonous:** Whole plant, seeds. **Irritant:** Skin (leaves, flowers, fruit).



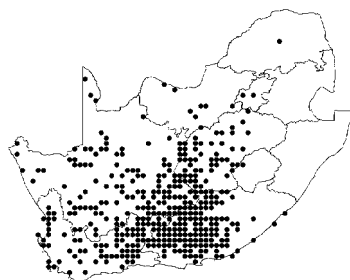
SOLANACEAE



Salsola tragus

Russian tumbleweed

Description: Robust, much-branched, rounded, annual herb to 60 cm high, with strong tap roots; the aerial portion tumbling with the wind when dry. **Leaves:** Green turning brownish, ~ succulent when young, narrowly linear, less than 1 mm wide in herbarium specimens, tips becoming sharp-pointed and rigid with age. **Flowers:** Inconspicuous, in the leaf axils, Sep–Apr. **Fruits:** Small, brownish capsules, with 5 spreading, membranous, veined wings. **Invades:** Roadsides, disturbed sites, cultivated lands, riverbanks, riverbeds, in dry or somewhat saline areas. **Origin:** Europe, N Africa, Asia.



Salsola kali is similar to *Salsola tragus* and was previously thought to be the common species in southern Africa. Leaves are more succulent and broader (1–2 mm) than *S. tragus*. Capsules with or without narrow, membranous, veined wings (compare with *S. tragus*). Invades coastal areas; distribution in South Africa uncertain. Origin: Europe, coastal N Africa, Asia.





Herbs: spiny



Solanum elaeagnifolium

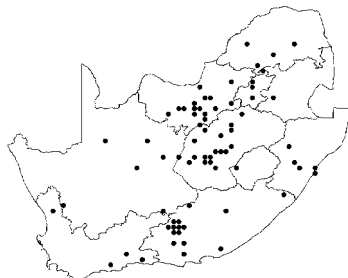
silver-leaf bitter apple

SOLANACEAE

Description: Herbaceous shrublet 30–60 cm high with annual stems and perennial, deep, spreading roots; stems covered with whitish, silvery hairs; reddish prickles arm the stems and undersides of leaves, or are absent.

Leaves: Greyish green above, often wavy and folded upwards along their margins to expose silvery or whitish undersurfaces. **Flowers:** Mauve, blue or white, Oct–Mar.

Fruits: Shiny berries, 1.2 cm across, green with white patches, turning yellow. **Invades:** Ploughed lands, grazing camps, roadsides, water furrows. **Origin:** N, C and S America. **Poisonous:** Young fruits, leaves.



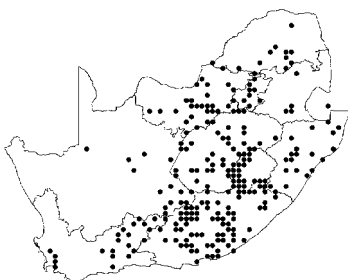
Xanthium spinosum

spiny cocklebur

ASTERACEAE

Description: Much-branched, annual herb to 1.2 m high; stems smooth, green or yellowish, armed with 3-pronged spines. **Leaves:** Blue-green, sparsely hairy above, densely white-woolly below, entire or 3-lobed, ~ lanceolate, to 6 x 2 cm. **Flowers:** Greenish, inconspicuous in axils of leaves, Oct–Apr. **Fruits:** Burs (A), ± 1 cm long, green, with reddish, hooked spines, turning yellowish then brown. **Invades:** Cultivated lands, old lands, overgrazed pastures, riverbanks.

Origin: Uncertain, probably S America. **Poisonous:** Seedlings, seeds, burs. **Irritant:** Skin (burs).

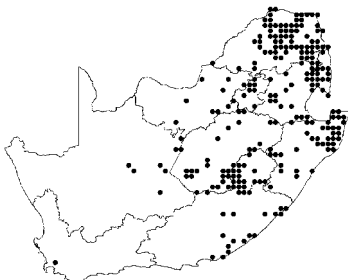


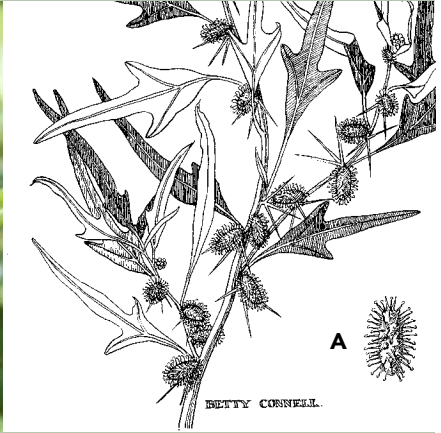
Xanthium strumarium

large cocklebur

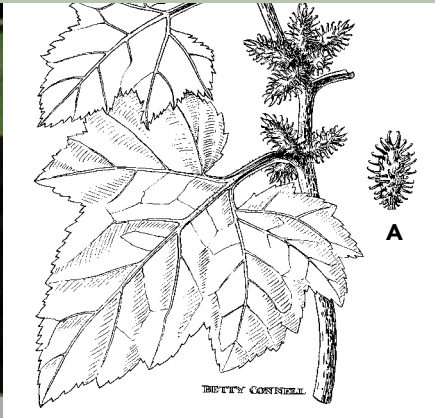
ASTERACEAE

Description: Much-branched, annual herb to 1.2 m high; stems stout, often red-spotted, roughly-hairy. **Leaves:** Green, with short, rough hairs on both surfaces; broadly 3-lobed, to 18 x 18 cm. **Flowers:** Inconspicuous, in leaf axils, Oct–Apr. **Fruits:** Burs (A), to 2 cm long, green turning yellowish then brown, in stalked, axillary clusters; each bur crowned with 2 stout, curved or straight horns and covered with hooked spines. **Use:** Honey source. **Invades:** Cultivated, old and overgrazed lands; roadsides; riverbanks. **Origin:** Probably C and S America. **Poisonous:** Seedlings, seeds, burs. **Irritant:** Skin (burs).





Geoff Nichols



Herbs: ferns

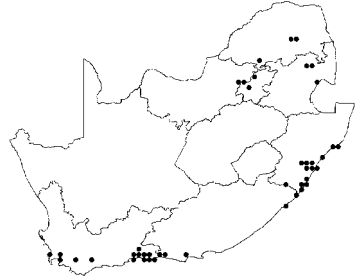


Nephrolepis cordifolia

erect sword fern, ladder sword fern

NEPHROLEPIDACEAE

Description: Evergreen fern with ~ erect, stiff fronds up to 1 m high; terrestrial or epiphytic; forms extensive colonies by means of stolons; produces tubers. **Leaves (fronds):** Pale green, pinnate; leaflets (pinnae) 2–4.5 cm long, oblong, mostly straight, blunt-tipped with basal ear-like lobes; medial leaflets overlapping, hiding the rachis underneath; scales on upper rachis 2-toned—pale brown with darker points of attachment. **Fruiting bodies (sori):** Brown, kidney-shaped, on undersurface of leaflets. **Cultivated for:** Ornament. **Invades:** Swamp forest, forest margins, plantations, coastal bush. **Origin:** Uncertain (pantropical). **NB:** It has long been mistaken for *N. exaltata* in South Africa.



Nephrolepis exaltata

sword fern, Boston sword fern

NEPHROLEPIDACEAE

Description: Evergreen, stoloniferous fern with suberect to arching fronds up to 1.5 m high or more; terrestrial or epiphytic; tubers absent. **Leaves (fronds):** Pale green; leaflets (pinnae) 3–7 cm long, linear to ovate-lanceolate, curving to sickle-shaped near frond apex, acute-tipped, with basal ear-like lobes; medial leaflets sometimes overlapping; scales on upper rachis of 1 colour. **Fruiting bodies (sori):** Brown, rounded to horseshoe-shaped on undersurface of leaflets. **Cultivated for:** Ornament. **Invasive status:** Undetermined. **Origin:** N and C America, W Indies. **NB:** Most *Nephrolepis* cultivars in cultivation have been derived from *N. exaltata*.



***Phlebodium aureum* (= *Polypodium aureum*)**

rabbit's-foot fern

POLYPODIACEAE

Description: Evergreen or deciduous, epiphytic fern with a creeping rhizome, 8–15 mm in diameter, covered in golden-brown scales. **Leaves (fronds):** Bright to glaucous-green, deeply lobed (pinnatisect), arching to pendent, 30–130 x 10–50 cm; segments linear to lanceolate with undulate margins. **Fruiting bodies (sori):** Orange-brown, rounded, on undersurface of leaflets (pinnae). **Cultivated for:** Ornament. **Invades:** Forests, swampy and damp sites in tropical and subtropical areas (KZN). **Origin:** N and S America, W Indies.



Marsilea mutica

nardoo, Australian water-clover

MARSILEACEAE

See aquatics.



Herbs: low-growing, mat-forming

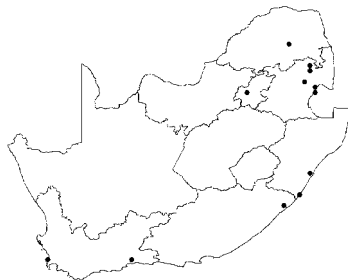


Persicaria capitata

creeping knotweed

POLYGONACEAE

Description: Perennial, glandular-hairy, creeping herb; stems reddish brown, 10–30 cm long, rooting at the nodes. **Leaves:** Green, paler below, with a v-shaped blotch on both surfaces, ovate to elliptic, glandular-hairy on both surfaces when young. **Flowers:** Pink, in dense, almost spherical heads 5–10 mm across; heads solitary on stalks 1–3 cm long, spring–autumn. **Fruits:** Black, shiny nuts \pm 2mm long. **Cultivated for:** Ornament, groundcover. **Invades:** Roadsides, moist sites, disturbed grasslands, margins of forests and plantations. **Origin:** Subtropical and temperate Asia.

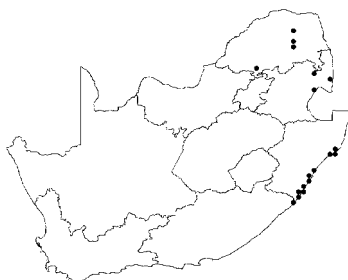


Spagneticola trilobata (= *Thelechitonina trilobata*)

Singapore daisy

ASTERACEAE

Description: Perennial herb, up to 30 cm high, with creeping and rooting stems to 2 m long. **Leaves:** Dark green, rough, glossy, 3-lobed, weakly lobed to entire, or toothed, up to 12 cm long. **Flowerheads:** Yellow to orange-yellow, to 3 cm across, solitary, terminal, on erect, long flowering-stalks up to 15 cm long; flowering all year. **Fruits:** Small, brown achenes. **Cultivated for:** Ornament, groundcover. **Invades:** Roadsides, riverbanks, wetland edges, coastal forest and dunes, urban open space. **Origin:** Tropical America (Mexico to Peru).

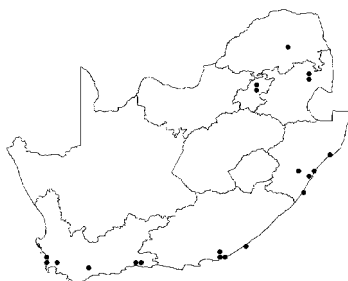


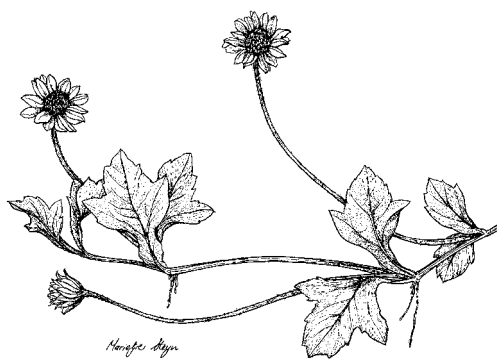
Tradescantia fluminensis

white-flowered wandering Jew

COMMELINACEAE

Description: Perennial creeping herb with succulent, rooting stems up to 50 cm high; propagates easily from stem fragments. **Leaves:** Dark green, sometimes purplish below, or with cream or white, longitudinal stripes, shiny, smooth, ovate to elliptic, to 10 x 3 cm, clasping the stems. **Flowers:** White, to 1.5 cm across, with 3 petals and 3 green sepals, summer. **Fruits:** Capsules. **Cultivated for:** Ornament, groundcover. **Invades:** Moist, shaded sites, disturbed forest, streambanks. **Origin:** S America. **Irritant:** Skin (sap). **NB:** *Callisia repens* is similar but has minutely hairy leaf margins and lacks broad petals.





Herbs: low-growing, mat-forming

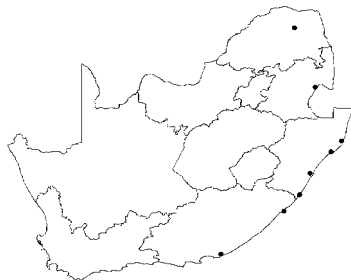


Tradescantia zebrina

purple wandering Jew

COMMELINACEAE

Description: Perennial, evergreen, creeping herb with succulent, rooting stems up to 50 cm high; propagates easily from stem fragments. **Leaves:** Bluish green with 2 broad, silver bands above, purplish beneath, shiny, smooth, ovate to broadly elliptic, to 10 x 3 cm, clasping the stems. **Flowers:** Pink or violet-blue, to 1.5 cm across, with 3 coloured petals united at the base and 3 transparent, united sepals, flowering in summer. **Fruits:** Capsules, dehiscent. **Cultivated for:** Ornament, groundcover. **Invades:** Moist, shaded sites, disturbed forest, streambanks. **Origin:** Mexico. **Irritant:** Skin (sap).

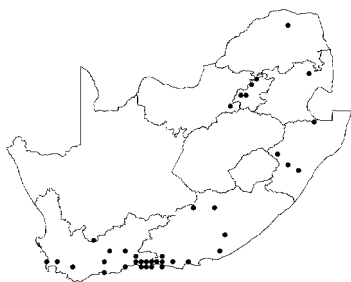


Vinca major

greater periwinkle

APOCYNACEAE

Description: Perennial, evergreen herb with erect flowering stems to 45 cm high; trailing vegetative stems root at the nodes; stems with latex; leaf margins, stalks and sepals with minute hairs visible with a hand lens. **Leaves:** Dark green, sometimes with creamy margins, glossy, ovate, 2.5–6 cm wide. **Flowers:** Blue-violet, sometimes white, 3–5 cm wide, with 5 spreading lobes, solitary, in leaf axils, spring–summer. **Fruits:** Paired follicles, rare in cultivation. **Cultivated for:** Ornament, groundcover. **Invades:** Moist, shaded sites, forest edges, streambanks, roadsides. **Origin:** Europe. **Poisonous:** Whole plant.



Vinca minor

lesser periwinkle

APOCYNACEAE

Description: Perennial, hairless, evergreen herb with erect flowering stems to 20 cm high; trailing vegetative stems root at the nodes; stems with latex.

Leaves: Dark green, sometimes with creamy margins, glossy, ovate, 0.5–3 cm wide; leaf margins not hairy (compare with *V. major*). **Flowers:** Blue-violet, sometimes pale blue, reddish purple or white, 2.5–3 cm wide, 5 spreading lobes, solitary, in leaf axils, spring–summer. **Fruits:** Paired follicles, rare in cultivation. **Cultivated for:** Ornament, groundcover. **Potentially invasive:** Moist, shaded sites, forest edges, streambanks, roadsides. **Origin:** Europe. **Poisonous:** Whole plant.





Geoff Nichols



All photos: *Vinca major*

Herbs: low-growing, mat-forming



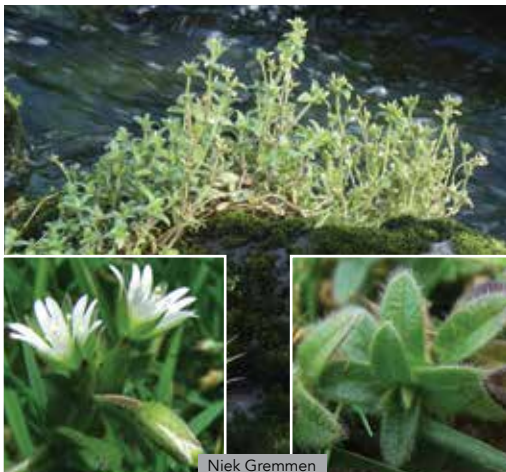
Cerastium fontanum

common mouse-ear chickweed

CARYOPHYLLACEAE

Description: Perennial, rhizomatous herb; tufted to mat-forming; flowering stems up to 3 cm high; stems and leaves hairy. **Leaves:** Green, in opposite pairs, densely covered with long, colourless hairs; stalkless; lower leaves broader than upper leaves. **Flowers:** White, in lax clusters of 1–5 flowerheads; petals 6–10 mm long, with deeply bilobed tips, ~ equaling sepals in length; sepal tips hairless; flowering peaks in Jan. **Fruits:** Capsules, narrowly cylindrical, curved, 9–17 mm long, opening with 10 teeth.

Used for: Medicinal purposes, food (vegetable). **Invades:** Grassland, moist & dry habitats, disturbed sites (FS, KZN, sub-Antarctic islands). **Origin:** Europe, N Africa, Asia.



Niek Gremmen

Houttuynia cordata

chameleon plant

SAURURACEAE

Description: Perennial herb to 60 cm high, mat-forming, spreading by rhizomes; leaves aromatic, either sweet or foetid. **Leaves:** Heart-shaped, alternate, leathery; usually variegated cream, bronze, red and green but can revert to plain green; 5-nerved from the base, gland-dotted. **Flowers:** In terminal spikes 1–3 cm long, subtended by 4–8, white, petal-like bracts; summer. **Fruits:** Capsules, dehiscent; seeds small. **Cultivated for:** Ornament, ground cover. **Potentially invasive:** Forests, moist sites, streambanks, edges of dams and ponds. **Origin:** Nepal to S China and Japan.



Lukas Otto

Sagina procumbens

birdeye pearlwort

CARYOPHYLLACEAE



Description: Perennial, hairless, mat-forming herb, 3–8 cm high; stems usually prostrate, rooting at nodes, giving rise to secondary tufts. **Leaves:** Bright green, hairless, margins entire, narrow, 4–17 mm long, ending in a bristle-like point; basal leaves of young plants frequently in rosettes; stem leaves opposite. **Flowers:** Mostly green, solitary or in small clusters; petals white, usually absent or very small ($\pm 1,5$ mm), smaller than or equaling the sepals; spring. **Fruits:** Capsules, \approx round, whitish, membranous, 4-valved, ± 2 mm long, with 4 blunt teeth on upper rim. **Invades:** Coastal cliffs and sands, moist and dry habitats, disturbed sites (sub-Antarctic islands). **Origin:** Europe, N Africa, Asia.



Photos: Niek Gremmen

Stellaria media

common chickweed

CARYOPHYLLACEAE



Description: Slender, annual or biennial herb up to ± 15 cm high, mat-forming, sometimes rooting from the nodes; stems hairless except for a line of hairs on one side of the stem between the nodes. **Leaves:** Bright green, hairless, opposite, stalkless above, stalked below, up to 4 x 2 cm. **Flowers:** White, small, solitary or few, in clusters; petals 3–4 mm long, with deeply bilobed tips, spring–autumn. **Fruits:** Capsules, membranous, ovoid to oblong, 5-valved, dehiscent, opening with 6 teeth. **Used for:** Medicinal purposes, food (vegetable, salad). **Invades:** Disturbed, moist and shaded sites (SA and sub-Antarctic islands). **Origin:** Europe, N Africa, Asia. **Poisonous:** In large quantities.



Photos: Niek Gremmen

Herbs: erect, clump-forming, strap-shaped leaves

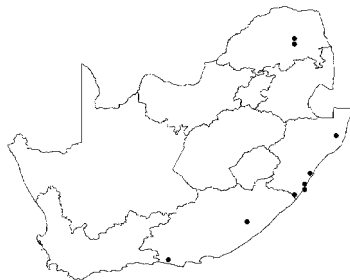


Alpinia zerumbet

shell ginger

ZINGIBERACEAE

Description: Robust, rhizomatous, clump-forming perennial to 4 m high; leaves broad, lanceolate, sheathing the stems; inflorescence drooping, showy, fragrant. **Leaves:** Bright green, hairless, shining, to 60 x 20 cm. **Flowers:** In racemes to 40 cm long, main axis very hairy; white, waxy, pink-tinged bracteoles enfold the buds; flowers orchid-like; corolla white, lip to 4 cm long, crinkled, yellow with red and brown variegations; Sep–Mar. **Fruits:** Red capsules (A). **Cultivated for:** Ornament. **Invades:** Watercourses, forest margins, roadsides, urban open spaces. **Origin:** NE India to Malaysia, China and Japan.



Anigozanthos flavidus

tall kangaroo paw

HAEMODORACEAE

Description: Perennial, rhizomatous herb to 2 m high, forming clumps up to 2 m across. **Leaves:** Green, basal, strap-like, up to 1 m long and 2 cm wide.

Flowers: Greenish yellow, yellow, green, brown or red, velvety hairy, tubular, 3–4.5 cm long, in clusters on tall, branched stems up to 2 m tall, Aug–Feb.

Fruits: Capsules. **Cultivated for:** Ornament. **Invades:** Roadsides, riverbanks, disturbed moist and dry sites in fynbos (WC: Kleinmond). **Origin:** W Australia. **Irritant:** Eyes, skin (hairs on flowers).

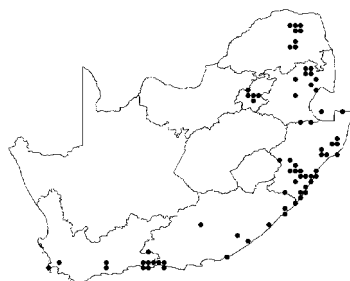


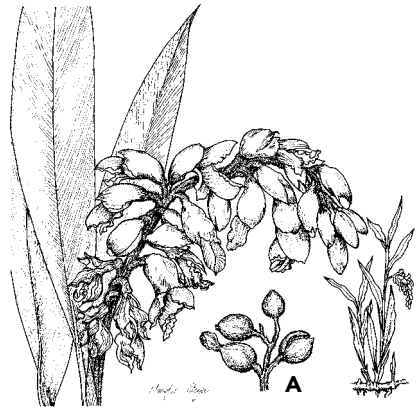
Canna indica

Indian shot

CANNACEAE

Description: Perennial, rhizomatous herb with erect, unbranched, leafy shoots 1–2 m high; leaves large, narrowly ovate to elliptic, sheathing the stem; flowers showy, non-fragrant. **Leaves:** Green, 20–60 x 10–30 cm, tapering to a point. **Flowers:** Red or orange, usually yellow below, narrow, 4–5 cm long, Sep–Apr(–all year). **Fruits:** Green, spiny, 3-valved capsules (A). **Cultivated for:** Ornament, edible rhizomes. **Invades:** Streambanks, moist sites, forest and plantation edges. **Origin:** Tropical America (C and S America, W Indies).





Herbs: erect, clump-forming, strap-shaped leaves

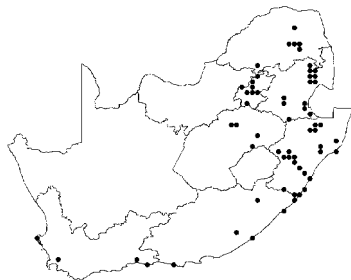


Canna x generalis

garden canna

CANNACEAE

Description: Perennial, rhizomatous herb with erect, unbranched, leafy shoots 1–2 m high; leaves large, narrowly ovate to elliptic, sheathing the stem; flowers showy, non-fragrant. **Leaves:** Glaucous or purple-bronze, 20–60 x 10–30 cm, tapering to a point. **Flowers:** Yellow, red, orange, white, other colours, broad, 8–9 cm long, Sep–Apr (all year). **Fruits:** Green, spiny, 3-valved capsules. **Cultivated for:** Ornament. **Invades:** Streambanks, moist sites, roadsides, around habitation. **Origin:** Garden origin; complex hybrid involving *C. indica* and others.

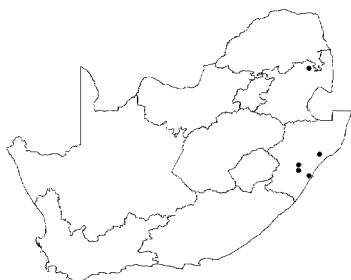


Hedychium coccineum

red ginger lily

ZINGIBERACEAE

Description: Robust, rhizomatous herb up to 2 m high; leaves broad, lanceolate, sheathing the stems; flowers showy, fragrant, with long-exserted stamens. **Leaves:** Bright green, tapering, up to 50 x 5 cm, downy beneath. **Flowers:** Red or salmon-red, with pink stamens in spikes up to 25 cm long; each flower up to 5 cm long, with a slender tube, 3 narrow and 3 broad petal-like lobes; floral bracts ~ cylindrical; Jan–Mar. **Fruits:** Capsules. **Cultivated for:** Ornament. **Invades:** Forests, plantations, riverbanks, and moist, shaded sites. **Origin:** Himalayas.

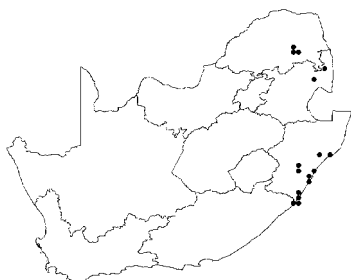


Hedychium coronarium

white ginger lily

ZINGIBERACEAE

Description: Robust, rhizomatous herb up to 2 m high; leaves broad, lanceolate, sheathing the stems; flowers fragrant, stamens not exserted. **Leaves:** Bright green, up to 60 cm long, tapering, downy beneath. **Flowers:** White, sometimes yellowish basally, with a single, long but not exserted, stamen; in spikes up to 30 cm long; each flower up to 13 cm long, with a slender tube, 3 narrow and 3 broad, petal-like lobes; floral bracts large, broad, tightly overlapping; Jan–Apr. **Fruits:** Capsules. **Cultivated for:** Ornament. **Invades:** Forests, plantations, riverbanks, and moist, shaded sites. **Origin:** India to Indonesia.





Geoff Nichols



Geoff Nichols

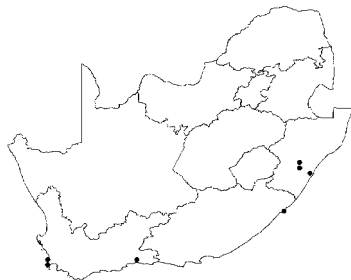


Hedychium flavescens

yellow ginger lily

ZINGIBERACEAE

Description: Robust, rhizomatous herb to 2 m high; leaves broad, lanceolate, sheathing the stems; flowers fragrant, stamens slightly exerted. **Leaves:** Bright green, to 50 cm long, tapering, downy beneath. **Flowers:** Yellow, sometimes reddish yellow basally, calyx ~ ½ length of corolla tube, in spikes to 30 cm long; each flower to 14 cm long, with a slender tube, 3 narrow and 3 broad, petal-like lobes; floral bracts broad, overlapping; Jan–Mar. **Fruits:** Capsules.



Geoff Nichols

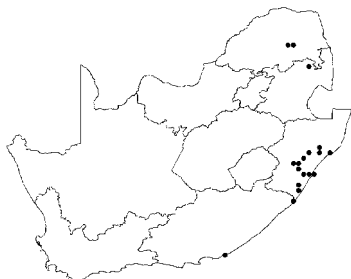
Cultivated for: Ornament. **Invades:** Forests, plantations, riverbanks, and moist, shaded sites. **Origin:** Himalayas. **NB:** The similar *H. flavum* has yellow flowers and calyx ~ length of corolla tube.

Hedychium gardnerianum

kahili ginger lily

ZINGIBERACEAE

Description: Robust, rhizomatous herb up to 2 m high; leaves broad, lanceolate, sheathing the stems; flowers showy, fragrant, with long-exserted stamens. **Leaves:** Glossy, greyish green, tapering, up to 40 cm long, downy beneath. **Flowers:** Yellow with red stamens, in spikes up to 35 cm long; each flower up to 9 cm long, with a slender tube, 3 narrow and 3 broad petal-like lobes; floral bracts ~ cylindrical; Jan–Apr. **Fruits:** Capsules, showy, red.



Geoff Nichols

Cultivated for: Ornament. **Invades:** Forests, plantations, riverbanks, and moist, shaded sites. **Origin:** Himalayas.



Geoff Nichols

Herbs: erect



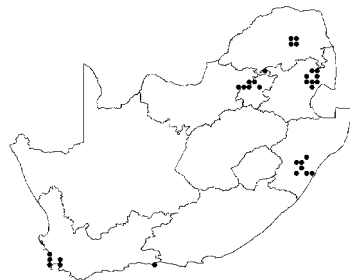
Ageratina adenophora

crofton weed

ASTERACEAE

Description: Perennial herb or soft shrub up to 2 m high with a short rootstock; leaves and stems densely glandular-hairy; stems may be galled by an introduced gall fly. **Leaves:** Dark green, ~ diamond-shaped or triangular, 3–6 cm wide, 3-nerved from the base, non-aromatic. **Flowers:** White, in terminal clusters, ± 5 x 5 mm, Aug–Dec. **Fruits:** Straw-coloured, bristly achenes, ± 2 mm long. **Cultivated for:** Ornament.

Invades: Roadsides, streambanks, forest margins, kloofs, plantations. **Origin:** Mexico. **Poisonous:** Causes chronic pulmonary disease in horses.



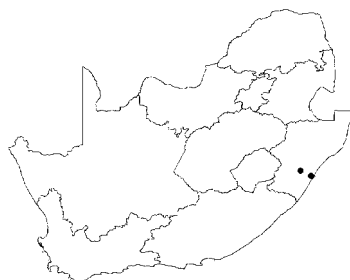
Ageratina riparia

mistflower, creeping crofton weed

ASTERACEAE

Description: Weak-stemmed, perennial herb up to 1 m high; stems purplish, creeping in lower parts, rooting at nodes, thinly hairy but not glandular. **Leaves:** Narrowly ovate or lanceolate, 8–30 mm wide, with main pair of veins arising distinctly above base. **Flowers:** White, in terminal clusters, ± 5 mm long, Aug–Dec. **Fruits:** Bristly achenes, ± 2 mm long. **Cultivated for:** Ornament.

Invades: Damp places, streambanks. **Origin:** Mexico. **Poisonous:** All parts are toxic to horses.



Ageratum conyzoides

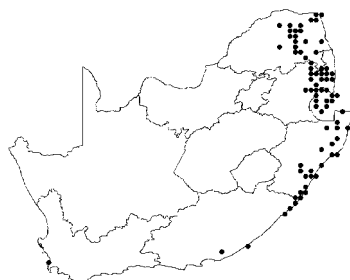
invading ageratum

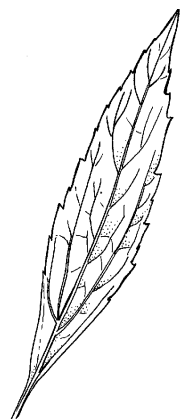
ASTERACEAE

Description: Softly hairy, slightly aromatic, annual herb with fluffy flowerheads; stems green, purplish or reddish, 0.3–1(–1.5) m high. **Leaves:** Bright green, ovate, margins shallowly toothed. **Flowers:** Mauve, blue, pinkish or white in compact, terminal flowerheads (**A**); heads 4–5 mm across, with slender, hardly exerted styles; flowering all year. **Fruits:** 1-seeded achenes.

Cultivated for: Ornament. **Invades:** Forest, woodland, grassland, cultivated lands, riverbanks, wetlands, coastal dunes. **Origin:** C and S America, W Indies.

Poisonous. Toxic to grazing animals.





Herbs: erect



Ageratum houstonianum

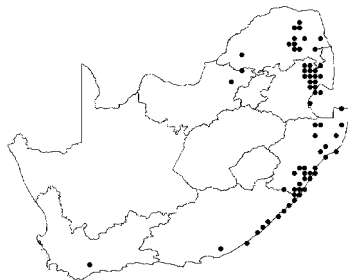
Mexican ageratum

ASTERACEAE

Description: Softly hairy, slightly aromatic, annual herb with fluffy flowerheads; stems green, purplish or reddish, 0.3–1(–1.5) m high. **Leaves:** Bright green, ovate, in opposite pairs, margins shallowly toothed or scalloped.

Flowers: Mauve, blue, pinkish or white in compact, terminal flowerheads; similar to *A. conyzoides* but heads 6–9 mm across, showing long, thicker, exerted styles; flowering all year. **Fruits:** Brown, 1-seeded achenes.

Cultivated for: Ornament. **Invades:** Forest, woodland, grassland, cultivated lands, riverbanks, wetlands, coastal dunes. **Origin:** Mexico. **Poisonous:** Toxic to grazing animals.



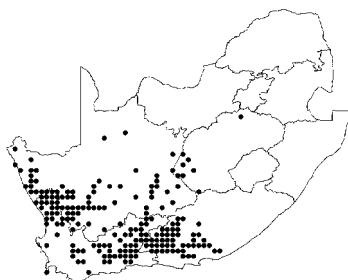
Atriplex inflata

sponge-fruit saltbush

AMARANTHACEAE

Description: Low, softly woody shrublet 20–40(–70) cm high, with creamy-white branches. **Leaves:** Silver-grey to bluish green, scaly, about 2 x longer than broad, margins smooth or slightly wavy and toothed. **Flowers:** Cream to yellow, minute, in tight axillary clusters at the ends of leafy stems (**A**), Sep–Feb(–all year). **Fruits:** Utricles (**B**), grey-green turning pink or straw-coloured, spongy and inflated, almost round, upper surface flattened, to 1 x 1 cm, 1-seeded; (**C**: fruiting stem).

Invades: Roadsides, degraded land, sandy riverbeds, coastal dunes, pans, low-lying areas, mainly in semi-arid regions. **Origin:** Australia.



Campuloclinium macrocephalum

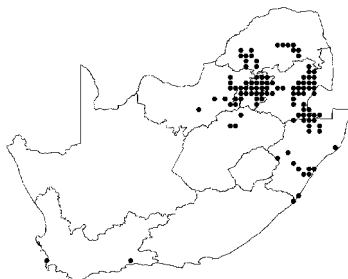
pompom weed

ASTERACEAE

Description: Erect, perennial herb with fluffy, pink flowerheads; stems to 1.5(–2) m high, dying back annually to a woody rootstock; roots tuber-like; stems and leaves covered with rough, bristly hairs.

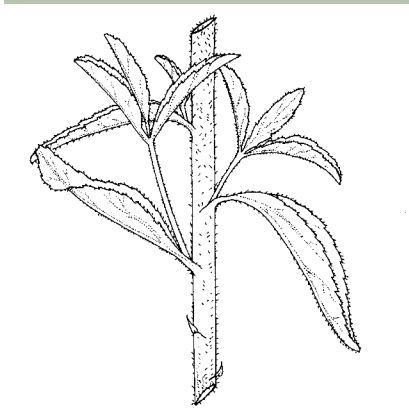
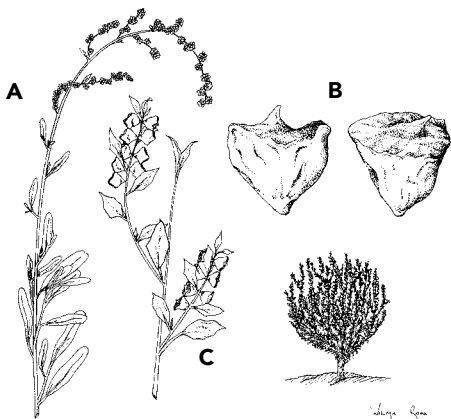
Leaves: Light green, lanceolate-elliptic, to 8 x 2 cm, margins toothed, becoming small and more distant upwards. **Flowers:** Pink, surrounded by purple bracts, in compact, terminal heads 1.5 x 2.5 cm, Dec–Mar.

Fruits: Achenes, 5 mm long, ringed with a tuft of bristles. **Cultivated for:** Ornament. **Invades:** Grassland, savanna, wetlands, roadsides, disturbed sites, fallow lands. **Origin:** C and S America.





Geoff Nichols



Herbs: erect



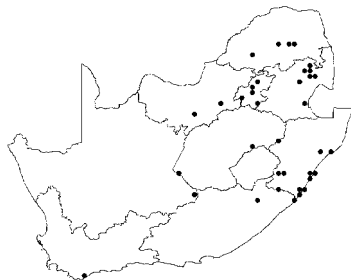
Coreopsis lanceolata

tickseed, coreopsis

ASTERACEAE

Description: Perennial, rhizomatous herb; flowering stems 30–50 cm high; stems longitudinally ridged and sparingly branched; stems and leaves thinly hairy or hairless; leaves mostly in a tuft near the base. **Leaves:** Dull green, linear to oblanceolate, 5–15 cm long, upper entire, lower usually pinnatifid (with lateral lobes).

Flowerheads: Bright yellow, showy, to 6 cm across, solitary on very long flowering-stalks, about 8 petals (ray-florets) 2–3 toothed, Oct–Dec. **Fruits:** Achenes, 3 x 3 mm, concave, broadly winged. **Cultivated for:** Ornament. **Invades:** Grassland, roadsides. **Origin:** E USA.



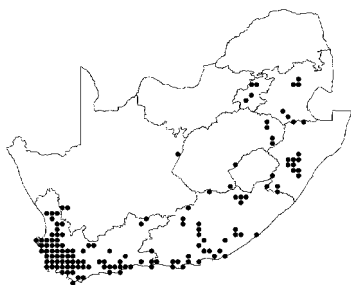
Echium plantagineum

Patterson's curse

BORAGINACEAE

Description: Deep-rooted, biennial herb to 1 m high; leaves and stems covered with coarse, white hairs with bulbous bases. **Leaves:** Stem leaves small, stalkless; basal rosette leaves large, stalked. **Flowers:** Blue or purple, in 1-sided racemes to 30 cm long, Oct–Apr.

Fruits: Nutlets. **NB** Inflorescence laxly branched, two exerted stamens per flower; basal leaves broad, stalked, with prominent lateral veins. **Cultivated for:** Ornament; honey source. **Invades:** Cultivated lands, pastures, roadsides, grassland, fynbos. **Origin:** Europe, Asia. **Poisonous:** To grazing animals, especially horses. **Irritant:** Skin (hairy stems).

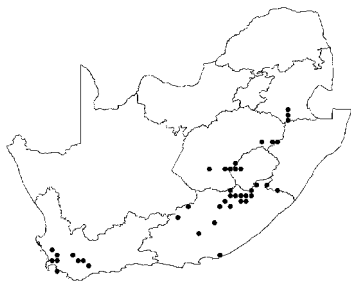


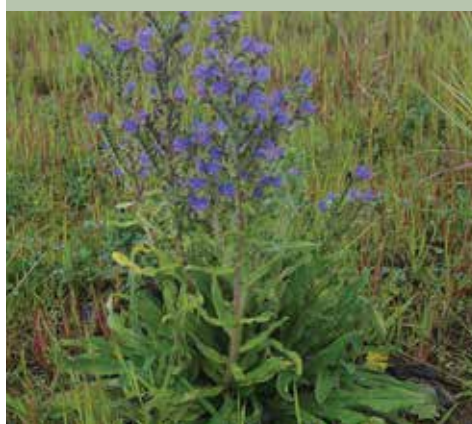
Echium vulgare

blue echium

BORAGINACEAE

Description: Deep-rooted, biennial herb up to 1 m high; leaves and stems covered with coarse, white hairs with bulbous bases. **Leaves:** Stem leaves small, stalkless; basal rosette leaves large, stalkless. **Flowers:** Blue or purple, in 1-sided racemes to 30 cm long, Oct–Apr. **Fruits:** Nutlets. **NB** Inflorescence spike-like, dense, 4–5 exerted stamens per flower; basal leaves narrow, stalkless, without prominent lateral veins. **Cultivated for:** Ornament; honey source. **Invades:** Cultivated lands, pastures, roadsides, grassland. **Origin:** Europe, Asia. **Poisonous:** To grazing animals, especially horses. **Irritant:** Skin (hairy stems).





Herbs: erect



Hypericum perforatum

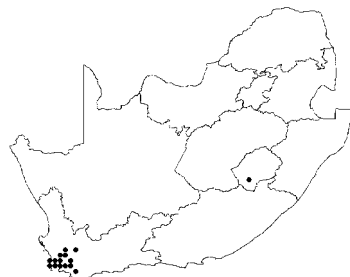
St John's wort

HYPERICACEAE

Description: Erect, softly woody perennial distinguished from indigenous species by its slender, creeping rhizomes; produces slender, erect stems to 1 m high in summer and spreading, prostrate stems in winter.

Leaves: Light green, to 2.5 x 0.5 cm, with translucent oil glands. **Flowers:** Bright yellow with black oil glands on margins of petals (A), to 2 cm across, Oct–Jan.

Fruits: 3-valved capsules (B) to 1 cm long. **Cultivated for:** Medicinal purposes. **Invades:** Fynbos, grassland, watercourses, wetlands, old lands, orchards. **Origin:** Europe, Asia. **Poisonous:** Whole plant, causing photosensitivity. **Irritant:** Skin (sap).



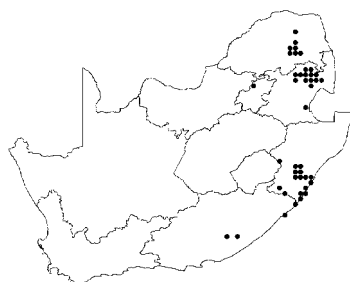
Lilium formosanum

Formosa lily

LILIACEAE

Description: Bulbous herb (A); stems 1.5–(2) m high, purplish brown towards the base, usually ~ rough-hairy.

Leaves: Dark, shiny green, scattered, narrow, 7.5–20 cm long, 5–(10) mm wide. **Flowers:** White, flushed with reddish purple outside, white inside, narrowly funnel-shaped, 12–20 cm long, fragrant, borne horizontally on stalks 5–15 cm long, Jan–Mar. **Fruits:** Capsules, 7–9 cm long. **Cultivated for:** Ornament. **Invades:** Grassland, moist sites, roadsides, plantations. **Origin:** Taiwan. **NB:** *L. longiflorum* is usually shorter, 0.3–1 m, with pure white flowers, and broader leaves, 10–15 mm wide.



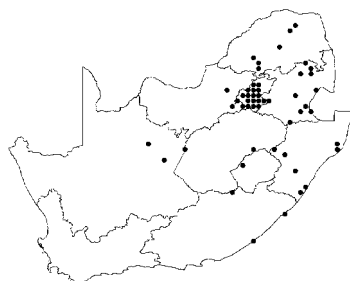
Mirabilis jalapa

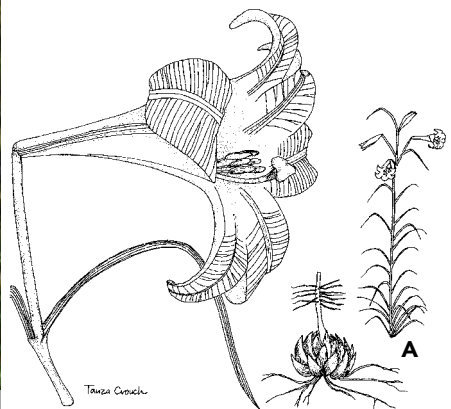
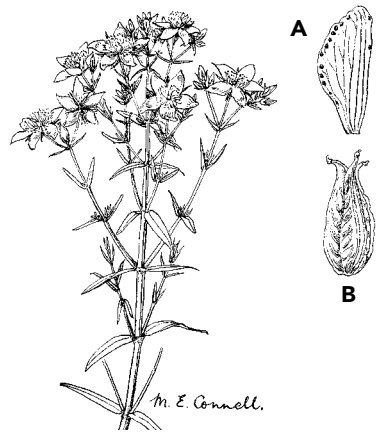
four-o'clock

NYCTAGINACEAE

Description: Erect, bushy, mostly hairless herb 0.5–1 m high; stems ~ square in cross-section, annual or perennial from a tuberous taproot. **Leaves:** Light or bright green, opposite, ~ elongate triangular, 4–14 x 2–9 cm, on stalks 1–7 cm long, margins entire.

Flowers: Rose-pink, yellow, white or variegated, 3–5 cm long, funnel-shaped with a long, narrow tube and 5 spreading lobes; clustered at the branch tips, spring–summer. **Fruits:** Nut-like, spherical, 7–11 mm long, wrinkled and black when mature. **Cultivated for:** Ornament. **Invades:** Streambanks, forest edges, disturbed sites, waste ground. **Origin:** Possibly Mexico.







Oenothera spp.

evening-primroses

ONAGRACEAE



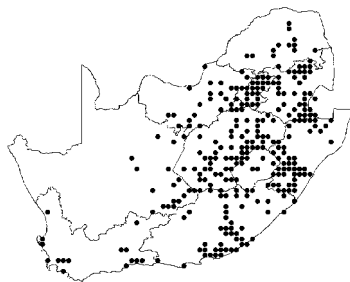
Description: Annual, biennial or perennial herbs 0.2–2 m high; stems erect, simple or branched, with or without a basal rosette; stems usually hairy, often with red-based, glandular hairs; flowers sometimes fragrant; 17 spp. naturalised. **Leaves:** Lanceolate to elliptic or obovate, up to 20 cm long; stipules absent.

Flowers: Yellow, white or rose-purple, 1–8 cm across, with floral tube, 4 petals and sepals, 8 stamens and a deeply 4-lobed stigma; axillary, often clustered near ends of stems, opening near sunset or sunrise, usually fading within a day; Sep–Apr. **Fruits:** Capsules (A), 8–55 mm long, usually dehiscent, many-seeded.

Cultivated for: Ornament, medicinal value. **Origin:**

N and S America. **Invades:** Grassland, savanna, fynbos, riverbanks, moist sites, roadsides, waste places. **NB:** *Gaura* now included in *Oenothera*, has indehiscent, nut-like fruits, 1–4 seeded; flowers usually radially symmetric.

NB: *Oenothera sinuosa* (= *Gaura sinuata*), an aggressively rhizomatous species, is a category 3 listed invasive plant. *O. lindheimeri* (= *Gaura lindheimeri*), a popular garden ornamental is becoming increasingly invasive in grassland and fynbos habitats.



Oenothera biennis



Oenothera glazioviana



Oenothera jamesii



Oenothera stricta



Oenothera lindheimeri

Stefan Nesper



Oenothera lindheimeri



Oenothera sinuosa

Stefan Nesper



Oenothera rosea

Herbs: erect

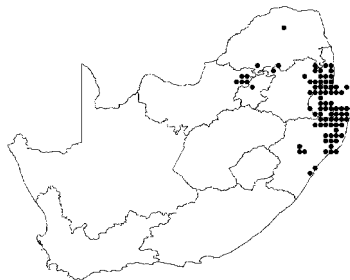


Parthenium hysterophorus

famine weed

ASTERACEAE

Description: Erect, annual herb to 1.5 m high; stem longitudinally grooved; stems and leaves shortly hairy; regular contact causes allergenic dermatitis and asthma. **Leaves:** Pale green, rosette and lower stem leaves deeply, pinnately lobed, 8–20 cm long; upper stem leaves shorter, less divided. **Flowers:** White, in small compact heads, about 3 mm across, on slender flowering-stalks in a terminal, open panicle, Sep–May. **Fruits:** Achenes, 2 mm long. **Invades:** Roadsides, railsides, watercourses, cultivated fields, overgrazed land. **Origin:** Mexico, C and S America, W Indies. **Irritant:** Skin & respiratory tract (whole plant).

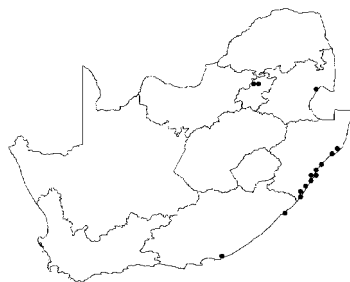


Rivina humilis

bloodberry

PHYTOLACCACEAE

Description: Erect, perennial herb, sometimes woody at the base, 30–90 cm high with spreading branches; shortly hairy when young. **Leaves:** Light green, thin, ovate to ovate-elliptic, blades to 9 x 4 cm, on long, slender stalks. **Flowers:** White or greenish to rosy, ± 2–4 mm across, in a slender, loose, many-flowered, axillary raceme up to 10 cm long, Oct–Jun(– all year). **Fruits:** Bright red berries, 2–3 mm across, containing 1 hairy seed per fruit. **Cultivated for:** Ornament. **Invades:** Forest, riverbanks, urban open space. **Origin:** USA, Mexico, C and S America, W Indies. **Poisonous:** Leaves, roots, fruits.

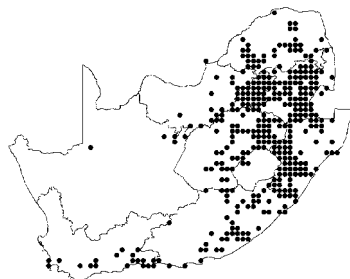


Verbena bonariensis

purple top, tall verbena

VERBENACEAE

Description: Annual or perennial herb, sparsely branching, with erect, 4-angled stems up to 2 m high; hairs on stems and leaves stiff and rough to touch. **Leaves:** Dark green, lanceolate, usually 5–15 x 1–3.5 cm, stalkless, ~ clasping at the base, margin toothed. **Flowers:** Dark purple, blue, lilac; terminal, ~ cylindrical, congested spikes; corolla tube ~ twice as long as calyx—flowers standing above inflorescence, Oct–Jun(–all year). **Fruits:** Dry, 4-lobed, with 4 mericarps. **Cultivated for:** Ornament. **Invades:** Grassland, wetlands, roadsides, disturbed sites, croplands. **Origin:** S America. **Poisonous?**





Lyn Fish



Geoff Nichols



Herbs: erect

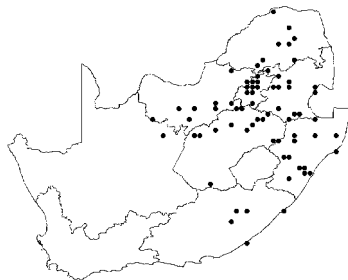


Verbena brasiliensis

slender wild verbena

VERBENACEAE

Description: Annual or perennial herb, sparsely branching, with erect, 4-angled stems to 2 m high; stems and leaves with minute, stiff, appressed hairs, becoming hairless and smooth. **Leaves:** Narrow-ovate, 4–5 x 1 cm, base ~ acute, slightly winged, not clasping stem; margins coarsely toothed; stalkless; lower leaves not deeply divided. **Flowers:** Bluish-purple, long, slender spikes with flowers crowded at tips; corolla tube 1.5–2 times as long as calyx, Sept–May(–all year). **Fruits:** Dry, 4-lobed. **Cultivated for:** Ornament. **Invades:** Grassland, wetlands, roadsides, disturbed sites, croplands. **Origin:** S America.

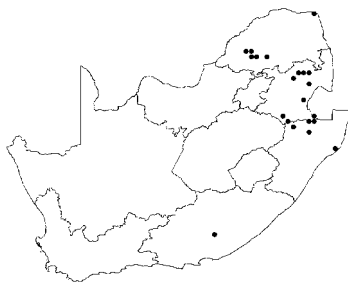


Verbena incompta

untidy purple top

VERBENACEAE

Description: Annual or perennial herb, sparsely branching, with erect, 4-angled stems to 2 m high; hairs on stems and leaves stiff and rough to touch. **Leaves:** Narrowly ovate, stalkless, base ~ heart-shaped, slightly clasping stem, margins coarsely toothed. **Flowers:** Purple, blue, lilac; terminal, congested spikes; corolla tube slightly longer than calyx—open flowers in a whorl below top of inflorescence, Oct–Jun(–all year). **Fruits:** Dry, 4-lobed. **Cultivated for:** Ornament. **Invades:** Grassland, wetlands, disturbed sites, croplands. **Origin:** S America. **NB:** Mistaken for, and possibly as widespread as, *V. bonariensis*.

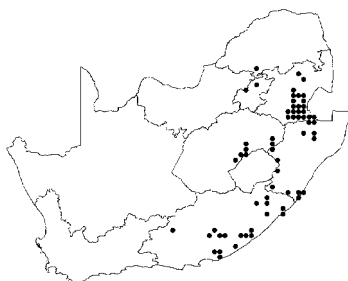


Verbena rigida (= *V. venosa*)

stiff verbena

VERBENACEAE

Description: Perennial herb, branches erect or ascending from a creeping rhizome, 30–60 cm high; stem hairs rough. **Leaves:** Green to greyish green, oblong-ovate or narrowly ovate, 4–12 x 1–4 cm, hairless, rigid, stalkless, base ~ heart-shaped, slightly clasping, margin coarsely and sharply toothed, often slightly wavy. **Flowers:** Reddish purple, pale lilac or blue-violet, in a terminal, dense spike; corolla tube 2–3 times as long as calyx; inflorescence lax, Sep–May(–all year). **Fruits:** Dry, 4-lobed. **Cultivated for:** Ornament. **Invades:** Grassland, wetlands, roadsides, disturbed sites, croplands. **Origin:** S America.







Agrimonia procera

scented agrimony

ROSACEAE

Description: Erect, perennial herb to 1.2 m high, with a woody rootstock; hairy throughout; stems with short, glandular hairs and long, simple hairs. **Leaves:** Light green, pinnate, with 7–13 large leaflets alternating with opposite pairs of much smaller leaflets, all deeply toothed. **Flowers:** Bright yellow, 1–1.5 cm across, in long, narrow, terminal inflorescences; calyx covered with hooked bristles; summer. **Fruits:** Achenes, enclosed within bristly calyx, 8 mm long, basal part ribbed for about ½ its length; upper bristles erect, lower bristles distinctly deflexed. **Cultivated for:** Medicinal use. **Invades:** Moist sites, grassland, forest margins, streambanks (widespread in SA). **Origin:** Europe, N Africa, W Asia.



Asphodelus fistulosus

onion weed

ASPHODELACEAE

Description: Annual or short-lived perennial with flowering stems up to 80 cm high; rhizome short, vertical; roots fibrous. **Leaves:** Shiny green, erect, hollow, cylindrical, 15–40 x 2–3 mm, sheathing at the base. **Flowers:** White to pinkish, in an erect, branched panicle; flowering stem hollow; flowers have a central reddish stripe in the middle of each perianth segment or 'petal', Aug–Oct. **Fruits:** Light brown, globose capsules, 4–6 x 3–6 mm. **Cultivated for:** Ornament. **Invades:** Roadsides and disturbed sites in deep sandy soils (WC: West Coast, Hopefield, Vredenburg). **Origin:** N Africa, Europe and Asia. **Irritant:** Skin (sap); causing dermatitis in humans. **NB:** Similar to indigenous *Trachyandra* species but distinguished by the articulated pedicels (flower stalks).



Photos: Ernita van Wyk

Catharanthus roseus

Madagascar periwinkle

APOCYNACEAE

Description: Erect, perennial herb, woody at the base, up to 1 m high.

Leaves: Bright green and glossy, sometimes yellowish, midvein prominent; 4–8 x 1–3 cm. **Flowers:** Pink or white, solitary or paired, in the axils of the upper leaves, flowering all year. **Fruits:** Green, cylindrical follicles 2.5–3.5 cm long (easily mistaken for unopened flower buds).

Cultivated for: Ornament, medicinal purposes.

Invades: Riverbanks, rocky outcrops, roadsides, waste places in dry savanna but also plantation, forest and coastal scrub margins (G, NW, L, M, KZN, EC, WC). **Origin:** Madagascar. **Poisonous:** Whole plant; neurotoxic and has caused fatalities in sheep.



Centranthus ruber

red valerian, devil's beard

CAPRIFOLIACEAE

Description: Erect, rhizomatous, perennial herb, woody at the base, up to 1 m high. **Leaves:** Grey-green, glaucous when young, hairless, fleshy, ovate to lanceolate, lower leaves stalked, upper leaves stalkless (stem-clasping), margin entire to slightly toothed, 5–8 cm long.

Flowers: Pink to rose-red or sometimes white, small, with slender tube 7–9 mm long and basal spur 5–7 mm long; in large, showy, terminal clusters, spring–summer.

Fruits: Achenes, with feathery bristles. **Cultivated for:** Ornament, edible leaves and roots. **Invades:** Disturbed sites and fynbos in the Cape Peninsula and surrounds. **Origin:** Europe, N Africa, W Asia.





Chondrilla juncea

skeleton weed

ASTERACEAE



Description: Biennial or perennial herb to 1.2 m high with a deep tap-root and creeping, lateral roots; stems much-branched, ascending, with stiff, basal hairs; almost leafless, latex present.

Leaves: Mainly basal, shallowly lobed, 4–20 x 1.5–5 cm, soon withering; stem leaves few, small, narrow, bract-like.

Flowerheads: Yellow, 1–2 cm across, stalkless, solitary or in clusters of 2–5 along stems; only ray flowers present, 9–12, strap-shaped with notched tips; Feb–Mar. **Fruits:** Achenes, ± 10 mm long, ribbed, topped with white hairs. **Invades:** Cultivated and pastoral lands (EC: Mtati village). **Origin:** Europe, N Africa, Asia.



John Hosking

Equisetum hyemale

rough horsetail

EQUISETACEAE



Description: Evergreen, rush-like perennial to 1 m high, with creeping rhizomes; stems dark green, mostly unbranched, 4–8 mm wide, stiff, very rough to touch, rounded, hollow, faintly ridged, jointed. **Leaves:** Minute, in whorls, united into a sheath at the nodes; leaf sheath 5–7 mm long, usually lacking apical teeth, white or grey, topped with a black ring and ultimately with black rings top and bottom. **Fruiting bodies:** Spike-like cones with pointed tips, 1–1.5 cm long, at tips of stems. **Cultivated for:** Ornament, often for pond margins. **Potentially invasive:** In moist sites; edges of lakes, rivers and ponds. **Origin:** Europe, Asia, N America. **Poisonous:** To horses. **NB:** Indigenous *E. ramosissima*: stems branched, leaf sheath with single black ring and apical teeth.



Euphorbia esula

leafy spurge

EUPHORBIACEAE

Description: Robust, perennial herb to 1.2 m high with numerous, erect, leafy stems from a woody rootstock; deep-rooted with vigorous lateral root growth; forms large colonies; all parts contain milky latex.

Leaves: Bluish green, lanceolate to ovate, 2–6 cm long, typically 5 mm wide, tips acute or rounded, margin entire, slightly wavy, arranged mostly alternately; stalk and stipules absent; lower leaves scale-like. **Flowers:** Small, in umbels, cyathial glands 2-horned, subtended by oval-triangular, yellow, petal-like bracts, spring–autumn. **Potentially invasive:** Riverbanks, grassland, savanna. **Origin:** Europe, Asia. **Poisonous:** To livestock. **Irritant:** Skin (latex).



Volker Kummer

Flaveria bidentis

smelter's-bush

ASTERACEAE

Description: Semi-herbaceous annual up to 1 m high; stems sparsely hairy, yellowish or orange. **Leaves:** Bluish green, opposite, stalkless to shortly stalked, linear to lanceolate, 4–8 x 1.5 cm, margins finely toothed, prominently 3-veined from the base. **Flowerheads:** Dark yellow, dense, axillary or terminal, stalkless or stalked, flowering summer–all year. **Fruits:** Black, 3mm long, sharply ribbed. **Invades:** Roadsides, railsides, cultivated lands, waste ground, overgrazed land, riverbanks, floodplains, wetlands (widespread in SA). **Origin:** S America.





Hypoestes phyllostachya

polka-dot plant

ACANTHACEAE

Description: Perennial, evergreen, softly hairy, woody-based herb to 1 m high; stems slender, angled to rounded.

Leaves: Dark green with pink to lavender spots, ovate, to 5 cm long. **Flowers:** Lilac to pinkish purple, solitary, axillary; corolla 2-lipped with upper lip 3-lobed and lower lip entire; late summer to winter. **Fruits:** Capsules. **Cultivated for:** Ornament.

Invades: Margins and understories of forests, shaded and moist disturbed sites (M, KZN). **Origin:** Madagascar.



Geoff Nichols



Lepidium draba

hoary cardaria

BRASSICACEAE

Description: Perennial, densely leafy, erect herb to 90 cm high, with whitish stems and deep roots; regenerating from root suckers.

Leaves: Bright green, densely and softly hairy on lower half of stem; to 10 cm long, entire to sharply toothed; upper leaves clasping stem with rounded or acute lobes.

Flowers: White, minute, sweetly scented in dense, terminal heads, Sep–Dec. **Fruits:** Capsules, \pm 2 mm long, inflated, indehiscent, heart-shaped with prominent style, splitting into 2 valves. **Invades:** Roadsides, cultivated lands, waste places (FS, EC, WC). **Origin:** Europe, N Africa, Asia. **Poisonous:** Suspected of livestock poisoning.



Peter Meininger

Limonium sinuatum

statice, sea lavender

PLUMBAGINACEAE

Description: Perennial herb to 40 cm high; stems and leaves densely hairy. **Leaves:**

In a basal rosette, lanceolate, pinnately lobed, up to 10 x 3 cm. **Flowers:** Calyx blue to lavender or white, funnel-shaped, ± 1 cm long; petals yellowish 2–4 mm long; papery, in compact spikes; flowering stems 3–5 winged, with narrow leaf-like appendages at branch points, Sep–Mar.

Fruits: Utricles, 5 mm long. **Cultivated for:** Ornament, cut-flower industry.

Invades: Roadsides, vacant lots, old lands, karoo and fynbos (EC, NC, WC). **Origin:** Europe, N Africa, W Asia.



Linaria dalmatica

Dalmatian toadflax, broad-leaf toadflax

PLANTAGINACEAE

Description: Rhizomatous, perennial herb,

usually hairless; many stems to 1.2 m high, usually dying back in winter. **Leaves:**

Pale blue-green, waxy, alternate, oval to broadly lanceolate with pointed tips, 2–6 cm long, 2–40 mm wide, suberect, rigid, clasping the stem. **Flowers:**

Golden-yellow with an orange-brown throat; corolla cylindric, large, 2–5 cm long, with a basal spur up to 2.5 cm long; in large, rather loose inflorescences of 10–50 flowers, spring–summer. **Fruits:**

Capsule, globose, 3–7 mm long; seeds wingless. **Cultivated for:** Ornament, cut-flowers. **Invades:** Disturbed sites around habitation, roadsides, railsides, grassland (FS, M, EC, KZN). **Origin:** SE Europe, W Asia. **Poisonous:** To livestock.





Linaria vulgaris

common toadflax, butter and eggs

PLANTAGINACEAE

Description: Rhizomatous, perennial herb; inflorescence hairy, hairless below; many stems to 1.2 m high, usually dying back in winter. **Leaves:** Pale blue-green, linear or narrowly elliptic, 2–6 cm long, 1–5 mm wide. **Flowers:** Pale yellow upper lip and bright yellow lower lip with an orange throat, corolla cylindric, 2–3 cm long, with a spur \pm 1 cm long; calyx glandular-hairy; in dense inflorescences of 5–30 flowers, summer–autumn. **Fruits:** Capsules, globose, 5–11 mm long; seeds winged.

Cultivated for: Ornament, cut-flowers.

Invades: Roadsides, disturbed sites, cultivated lands, pastures, moist sites (G, FS, M, KZN, EC, WC). **Origin:** Europe, Asia. **Poisonous:** To livestock.



F Vincentz, Wikimedia Commons, CC-BY-SA-3.0

Malva verticillata

mallow

MALVACEAE

Description: Bushy, biennial herb with erect stems to 1 m high; stems and leaves softly hairy. **Leaves:** Blue-green, almost circular, 4–11 cm across, shallowly, but distinctly 5–7 lobed, margin wavy-toothed, on long stalks 4–8 cm long.

Flowers: White to pinkish with darker veins, 10–15 mm across, petals ~ twice as long as the calyx, short-stalked, forming dense whorls in leaf axils, spring–summer.

Fruits: Discoid, 6–7 mm across, with 10–12 mericarps (1-seeded segments), faintly ridged. **Cultivated for:** Ornament.

Invades: Disturbed sites, streambanks (G, FS, NW, M, NC, WC). **Origin:** China.



Malvastrum coromandelianum

prickly malvastrum

MALVACEAE

Description: Erect, annual or biennial herb to 0.6(–1) m high; stems tough, often purplish with long, silvery, appressed hairs. **Leaves:** Green, ovate to lanceolate, up to 6 x 4 cm, venation conspicuously sunken on upper surface; margin coarsely toothed; stalk 1–2 cm long. **Flowers:** Yellow, solitary or a few clustered in leaf axils, flower stalks \pm 5 mm long, petals \pm 10 mm long; calyx subtended by 3 narrow, sepal-like bracts (absent in *Sida* spp.); spring–summer. **Fruits:** Discoid, 5–7 mm across, with \pm 13 one-seeded, spiny, hairy segments. **Invades:** Roadsides, disturbed sites, cultivated lands, savanna, wetlands, riverbanks (G, L, M, KZN, EC). **Origin:** N, C and S America.



Nicandra physalodes

apple of Peru

SOLANACEAE

Description: Erect, much-branched, annual herb up to 1.5 m high or more; mostly hairless; stems angled and grooved, sometimes purple-tinged. **Leaves:** Bright green, alternate, ovate, up to 20 x 12 cm, margins irregularly toothed or lobed; stalk about 4 cm long, ~ winged. **Flowers:** Blue or pale violet with white throat, to 4.5 cm across, solitary, axillary, summer. **Fruit:** Dry berries, green to yellow or brown when ripe, 10–15 mm across, enclosed within 5-sided, net-veined, bladder-like, inflated calyx. **Invades:** Roadsides, cultivated lands, disturbed sites, plantations, savanna, streambanks (G, NW, L, M, KZN, EC, WC). **Origin:** Peru. **Poisonous:** Fruit, especially seeds; toxic to livestock.



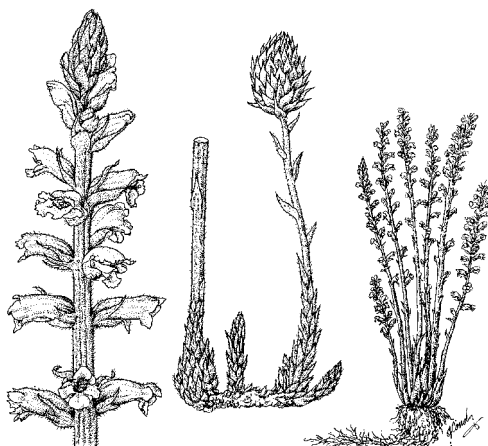


Orobanche minor

clover broomrape

OROBANCHACEAE

Description: Erect, annual herb to 50 cm high with purple, sticky, shortly hairy, flowering stems branching only at the base; root-parasite without chlorophyll; parasitic on leguminous crops and asteraceous plants. **Leaves:** Purplish brown bracts to 1.5 cm long. **Flowers:** Yellowish, flushed and veined with purple; 2 cm long, subtended by a purplish brown bract; no bracteoles present; in dense, terminal spikes, spring–summer. **Fruits:** Brown, membranous capsules splitting into 2 valves with numerous, small seeds less than 0.5 mm long. **Invades:** Croplands, pine plantations, gardens, fynbos (EC, WC). **Origin:** Europe.



Orobanche ramosa

blue broomrape, branched broomrape

OROBANCHACEAE

Description: Erect, annual herb to 40 cm high with sticky, often purple, shortly hairy, flowering stems, usually with lateral branches; root-parasite without chlorophyll; parasitic on solanaceous crops, *Cannabis* and others. **Leaves:** Brownish bracts to 1 cm long. **Flowers:** Whitish to pale blue or lilac, 1–2 cm long, subtended by a bract and 2 linear bracteoles, in a lax, many-flowered spike, spring–summer(–autumn).

Invades: Croplands, roadsides, urban areas, grassland, fynbos (L, M, NC, WC).

Origin: Europe, N Africa, W Asia.



Adriaan Grobler

Phytolacca americana

American pokeweed

PHYTOLACCACEAE

Description: Erect, bushy perennial, 1–3 m high, ~ woody at the base; stems and inflorescences pink to reddish, hairless.

Leaves: Green, elliptic to lanceolate, to 30 x 12 cm, stalk to 6 cm long, margins entire, hairless, unpleasant smelling.

Flowers: White to pinkish, small, with 5 petal-like sepals, stalks 3–13 mm long, in an erect or drooping raceme to 30 cm long, summer.

Fruits: Berries, shiny, purple-black when mature, 6–11 mm across, \pm 10 ribbed (tightly fused carpels), on pink stalks longer than the berries; fruiting raceme usually pendent. **Used for:** Food, medicine, poison. **Invades:** Forest margins, roadsides, riverbanks (FS, L, M, KZN, EC, WC). **Origin:** Canada, USA. **Poisonous.**



Phytolacca octandra

forest inkberry

PHYTOLACCACEAE

Description: Erect, bushy perennial, 1–3 m high, ~ woody at the base; stems and inflorescences green to pinkish, hairless.

Leaves: Green, elliptic to lanceolate, to 30 x 15 cm, stalk to 6 cm long, margins entire, hairless, unpleasant smelling.

Flowers: White to pinkish, small, with 5 petal-like sepals, stalks 0.5–2 mm long, in an erect spike to 30 cm long, spring–summer.

Fruits: Berries, shiny, purple-black when mature, 7–8 mm across, \pm 8 ribbed (tightly fused carpels), on flower-stalks shorter than the berries; fruiting raceme erect. **Invades:** Forest margins, riverbanks, grassland, waste places (G, FS, L, M, KZN, EC, WC). **Origin:** Mexico, C and S America, W Indies. **Poisonous.**



Herbs: erect



Rumex acetosella

sheep sorrel, red sorrel

POLYGONACEAE

Description: Perennial, hairless, rhizomatous herb with erect or ascending, deeply ridged, green to reddish stems up to 0.5 m high. **Leaves:** Green, clustered at the base, alternate on the stem and arrowhead-shaped, with spreading basal lobes; blades up to 5 x 2 cm, on long stalks. **Flowers:** Red (female) or yellowish (male) in large, terminal panicles, on separate plants, spring–summer. **Fruits:** Brown, 3-angled achenes, to 1.5 mm long. **Used for:** Food garnish, salads. **Invades:** Roadsides, disturbed sites (all SA provinces and sub-Antarctic Islands). **Origin:** Europe, N Africa, Asia. **Poisonous:** Toxic to livestock in large quantities.



Photos: Niek Gremmen

Salvia coccinea

scarlet sage

LAMIACEAE

Description: Annual or short-lived perennial up to 1.2 m high; stems with bristly hairs. **Leaves:** Green, softly hairy, triangular-ovate, 3–6 x 2.5–4 cm, margin scalloped with forwardly pointing teeth. **Flowers:** Scarlet, corolla slightly curved, 20–23 mm long with middle lobe of lower lip broadest; stamens red, long-protruding; in 3–6-flowered whorls along a terminal spike, October–Apr. **Fruits:** Nutlets, yellow-brown with blackish spots, held inside the inflated calyx. **Cultivated for:** Ornament. **Invades:** Savanna, streambanks, roadsides, disturbed sites around habitation (NW, L, M, KZN, EC). **Origin:** S USA, Mexico, C and S America.



Moleseng Moshobane

Salvia tiliifolia

lindenleaf sage

LAMIACEAE

Description: Erect, shortly hairy, annual herb to 1.2 m high. **Leaves:** Lime green, soft, sparsely hairy, broadly ovate, 5–10 x 4–9 cm, margin with rounded teeth, in opposite pairs with each pair at right-angles to the last. **Flowers:** Blue, corolla 5–10 mm long, calyx 4–7 mm long, in whorled clusters along a terminal spike up to 25 cm long, Mar–Apr. **Fruits:** Nutlets, 3-angled, enclosed within inflated calyx 10 mm long. **Cultivated for:** Ornament. **Invades:** Roadsides, waste places, rocky hillsides; favours shady sites under tree canopies (G, NW, M, KZN, EC). **Origin:** Mexico, C and S America.



Solanum pseudocapsicum

Jerusalem cherry

SOLANACEAE

Description: Short-lived, unarmed, almost hairless, evergreen, herbaceous shrublet 0.5–1.2 m high. **Leaves:** Dark green, lanceolate, to 10 x 3 cm; margin entire, slightly wavy; with a narrowly winged stalk. **Flowers:** White, star-shaped, to 1.5 cm across, 1 to few, in short-stalked, axillary clusters, Oct–May. **Fruits:** Shiny, globose berries, 1.5–2 cm across, green, ripening to orange and bright red. **Cultivated for:** Ornament. **Invades:** Disturbed sites, streambanks, and moist, shaded sites (G, FS, NW, L, M, KZN, EC, WC). **Origin:** Mexico, C and S America, W Indies. **Poisonous. NB:** Var. *diflorum* is minutely downy with branched hairs; berries yellow.



Herbs: erect



Solidago altissima & *S. gigantea*

goldenrods

ASTERACEAE

Description: Perennial herbs up to 2 m high; rhizomatous, more or less hairy.

Leaves: Numerous, 3-nerved, sessile to shortly stalked, entire to serrated, 4–17 cm x 5–40 mm. **Flowers:** Bright yellow, numerous, on long arching branches. **Fruits:** Achenes. **Cultivated for:** Ornament, cut-flowers. **Invades:** Grasslands, plantations, old lands (KZN, WC). **Origin:** N America.

Distinguishing features: *S. altissima*: stem leaves < 2 cm wide, stem hairy in upper parts, undersides of leaves often hairy. *S. gigantea*: stem leaves mostly > 2 cm wide, stem hairless and glaucous, undersides of leaves often hairless.



Solidago altissima

Jessi Kalwij

Stachytarpheta cayennensis

blue snakeweed

VERBENACEAE

Description: Perennial herb or slender subshrub 0.5–2 m high, stems branched, ~ hairless, woody at the base. **Leaves:** Bright green, broadly elliptic to ovate, 4–12 x 2–7 cm, hairless, margins regularly and sharply toothed. **Flowers:** Purple-blue, mauve or royal blue with light or white throat, corolla tube 7–8 mm long, corolla limb with 5 spreading lobes < 10 mm across, stalkless, in elongated spikes 14–45 cm long, rachis \pm 3 mm wide (to 7 mm after flowering), spring–autumn.

Fruits: Included in calyx, with 2 mericarps. **Cultivated for:** Ornament, hedging, medicine. **Invades:** Savanna, grassland, roadsides, streambanks (KZN). **Origin:** C and S America, W Indies. **Poisonous.**



Stachytarpheta mutabilis

pink snakeweed

VERBENACEAE

Description: Perennial herb or slender subshrub 1–3 m high; stems stout, branched, densely hairy, woody at the base. **Leaves:** Bright green, thick or leathery, ovate to elliptic, 5–12 x 2–6 cm, densely velvety below, margins scalloped or toothed. **Flowers:** Scarlet, crimson or red, fading to pink; corolla tube to 2.5 cm long; corolla limb with 5 spreading lobes 1–2 cm across; stalkless, in elongated spikes to 60 cm long; rachis stout > 5 mm wide (to 1 cm after flowering); spring–summer. **Fruits:** Included in calyx, with 2 mericarps. **Cultivated for:** Ornament, hedging, medicine. **Invades:** Roadsides, disturbed sites (L, KZN). **Origin:** C and S America, W Indies. **Poisonous.**



Verbascum thapsus

common mullein, velvet dock

SCROPHULARIACEAE

Description: Biennial herb 0.5–2 m high, from a rosette of leaves close to the ground in the first year. **Leaves:** Basal leaves densely greyish or whitish hairy, soft to touch, ovate to oblong, 8–50 x 2.5–14 cm, scalloped to almost entire, base tapering into leaf stalk; upper leaves stalkless. **Flowers:** Yellow, 1.5–3 cm across, in dense racemes, 15–100 cm long, Nov–March. **Fruits:** Capsules, broad-ovoid, 7–10 mm long, hairy; seeds very small, numerous. **Cultivated for:** Ornament. **Invades:** Grassland, roadsides, disturbed sites (G, FS, M, KZN, NC). **Origin:** N Africa, Europe and Asia. **Poisonous:** Seeds. **Irritant:** Skin (leaf hairs).



Climbers & Scramblers



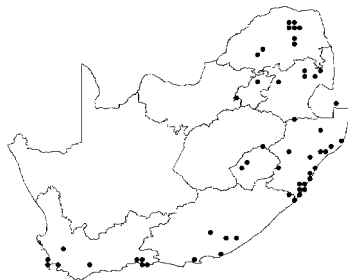
Anredera cordifolia

bridal wreath, Madeira vine

BASELLACEAE

Description: Perennial, much-branched climber 3–6 m or higher, draping itself over other plants; leaves and stems semi-succulent. **Leaves:** Bright green, glossy.

Flowers: White, showy, fragrant, 5 mm across, produced in spikes to 30 cm long; stigma 3-cleft, style divided to various degrees (as opposed to *A. baselloides* with style undivided), Feb–May. **Fruits:** None; reproduces from aerial tubers, produced in leaf axils, and which later drop to the ground. **Cultivated for:** Ornament, edible tubers. **Invades:** Woodland, forest edges and clearings, plantations, watercourses, urban open space. **Origin:** S America. **Poisonous.** Water extracts.



Antigonon leptopus

coral creeper

POLYGONACEAE

Description: Perennial, tendril-climbing vine with slender, angular stems to 12 m high; hairless or young shoots shortly hairy; all floral parts coloured and showy; roots tuberous. **Leaves:** Green, membranous, very veiny, broadly ovate, heart- or spear-shaped, 5–12 x 3–8 cm. **Flowers:** Bright pink, sometimes white, enlarging to 3.5 cm long; 6–20 in axillary racemes that terminate in tendrils, Nov–Apr. **Fruits:** Achenes, conical, loosely covered by enlarged, persistent, papery perianths (A). **Cultivated for:** Ornament, edible tubers; provides honey. **Invades:** Coastal and inland bush and thicket. **Origin:** Mexico.

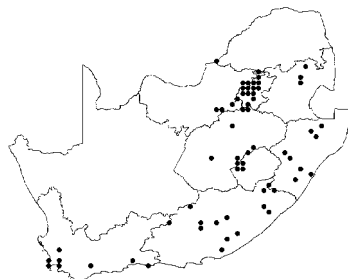


Araujia sericifera

moth catcher

APOCYNACEAE

Description: Robust, subwoody climber with milky juice, to 5 m or higher. **Leaves:** Dark green and smooth above; pale green or whitish below with very short, dense hairs; to 5 x 3 cm. **Flowers:** White, cream or pale pink, often with maroon streaks inside, Nov–Apr. **Fruits:** Green, spongy, deeply grooved follicles to 12 x 6 cm, turning brown and woody, splitting to release blackish seeds each with a tuft of silky hairs ± 2.5 cm long. **Cultivated for:** Ornament. **Invades:** Forest clearings, woodland, plantations, wasteland, urban open space, watercourses, wooded kloofs. **Origin:** S America. **Poisonous:** Whole plant. **Irritant:** Skin (sap).





Climbers & Scramblers

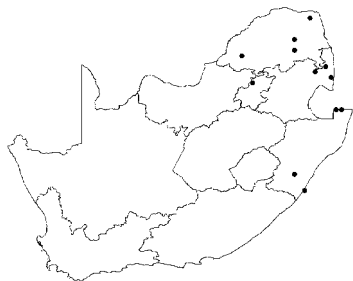
Aristolochia littoralis (= *A. elegans*)

Dutchman's pipe

Description: Hairless, woody-stemmed, evergreen, twining climber 2–3(–7) m high, with slender, pendulous flowering branches. **Leaves:** Bright green above, greyish below, membranous, heart- to kidney-shaped, 5–7 nerved from the base, 2–8(–12) cm long; stipules round to kidney-shaped, 1–2 cm long. **Flowers:** Maroon with white marbling, throat yellow, heart-shaped, 5–10 cm long, Feb–May. **Fruits:** Brown capsules, sausage-shaped, 4–6 cm long, 6-ribbed, like hanging baskets after dehiscence. **Cultivated for:** Ornament. **Invades:** Riverine forest, plantations. **Origin:** S America. **Poisonous.**



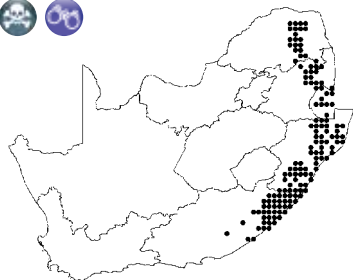
ARISTOLOCHIACEAE

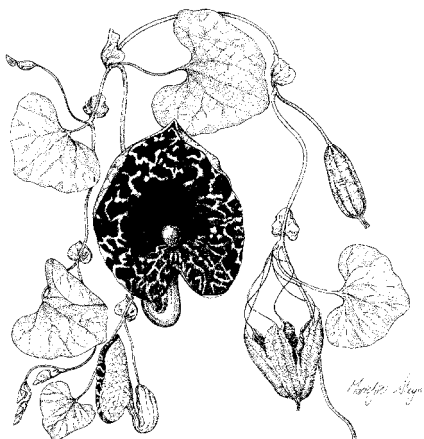


Caesalpinia decapetala

Mauritius thorn, Mysore thorn

Description: Robust, thorny, evergreen shrub or climber to 10 m or more, often forming dense thickets, stems minutely golden-hairy; stem thorns ~ straight to hooked, numerous, not in regular rows or confined to nodes. **Leaves:** Dark green, paler below, not glossy, to 30 cm long, leaflets to 8 mm wide. **Flowers:** Pale yellow, in elongated, erect clusters 10–40 cm long, May–Nov. **Fruits:** Brown, woody pods, flattened, unsegmented, smooth, sharply beaked at apex, ± 8 cm long. **Cultivated for:** Security hedging, ornament. **Invades:** Forest margins and gaps, plantations, savanna, grassland, roadsides, watercourses, dongas, degraded and overgrazed lands. **Origin:** Temperate and tropical Asia.





Geoff Nichols



Geoff Nichols



Climbers & Scramblers

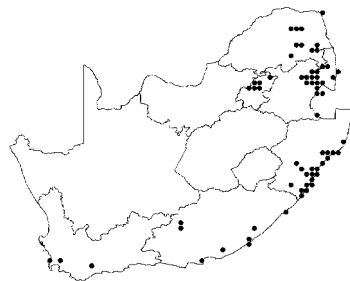
Cardiospermum grandiflorum

balloon vine

Description: Perennial, slightly woody climber with tendrils, 2–5 m or higher; often draping itself over trees; stems usually covered with bristly hairs. **Leaves:** Bright green, with 3 leaflets each further divided into 3, margins toothed, variously hairy. **Flowers:** White or yellow (A), fragrant, 7–11 mm long, in many-flowered and compact heads, Oct–Jan(–all year). **Fruits:** Membranous, inflated capsules (B), 4.5–6.5 cm long, green turning brown, pointed, much longer than broad; seed (C) black, round, with an oblong, white spot. **Cultivated for:** Ornament. **Invades:** Forest margins, plantations, watercourses, urban open spaces. **Origin:** C and S America.



SAPINDACEAE



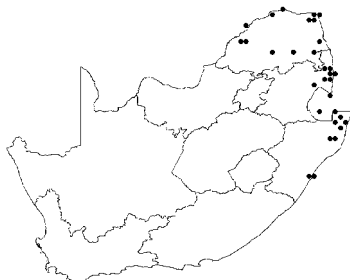
Geoff Nichols

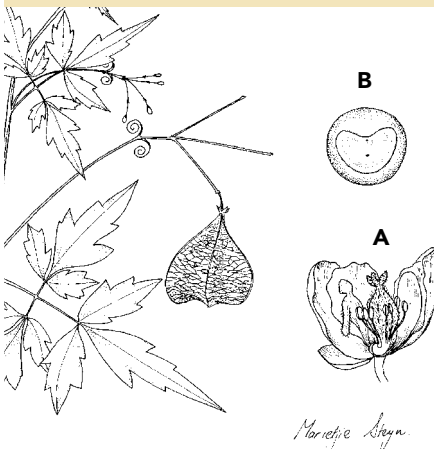
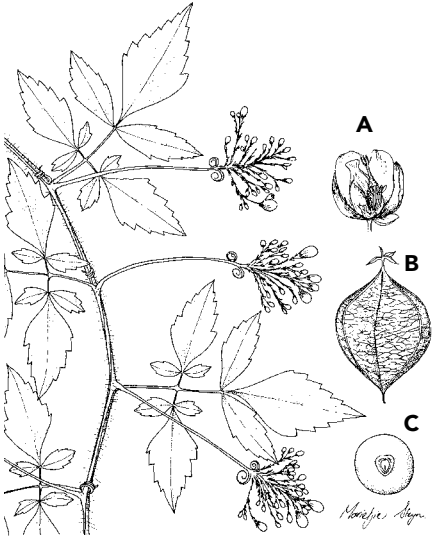
Cardiospermum halicacabum

lesser balloon vine

Description: Herbaceous or slightly woody, tendrill climber, 1–3(–6) m high; stems and leaves minutely hairy to hairless. **Leaves:** Bright green, with 3 leaflets each further divided into 3, margins toothed (scalloped or lobed in *C. corindum*). **Flowers:** White or yellow (A), 2–3 mm long, in few-flowered, open clusters, Jan–Jun(–all year). **Fruits:** Membranous, inflated capsules, 2.5–3.0 cm long, green turning brown, nearly globular; seed (B) black, round, with a kidney-shaped white spot. **Cultivated for:** Ornament. **Invades:** Forest margins, woodland, grassland, riverbanks, rocky sites. **Origin:** Possibly tropical America; now throughout subtropics and tropics.

SAPINDACEAE





Climbers & Scramblers

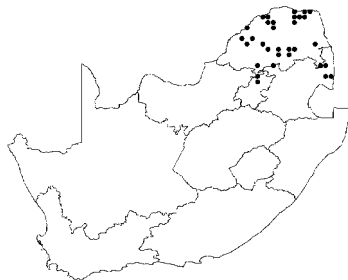


Cryptostegia grandiflora

rubber vine

APOCYNACEAE

Description: Scrambling shrub 2–3 m high or climber to 10 m or more; branches hairless with numerous, small lenticels. **Leaves:** Dark green, shiny, hairless; midribs and stalks of young leaves pinkish; midribs and stalks of older leaves white or yellow. **Flowers:** Pale pink, 5–6(–7) cm long, coronal filaments bilobed, summer. **Fruits:** Follicles, often more than 10 cm long, splitting to release seeds with tufts of hairs 3–4 cm long. **Cultivated for:** Ornament. **Invades:** Savanna, riverbanks, dongas, urban open spaces. **Origin:** Madagascar. **Poisonous:** Cardiac glycosides; toxic to domestic livestock. **Irritant:** Skin, eyes (sap).

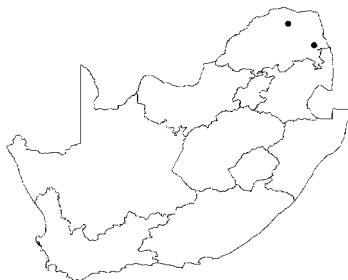


Cryptostegia madagascariensis

purple rubber vine

APOCYNACEAE

Description: Scrambling shrub 2–3 m high or climber to 10 m or more; branches hairless to hairy, usually with few, conspicuous lenticels. **Leaves:** Dark green, shiny, hairless to hairy; midribs and stalks of both young and older leaves white or yellow. **Flowers:** Bright pink or purple, 3–4(–6) cm long, coronal filaments entire, summer. **Fruits:** Follicles, shorter than 10 cm long, seeds with tufts of hairs 2–3 cm long. **Cultivated for:** Ornament. **Invades:** Savanna, riverbanks. **Origin:** Madagascar. **Poisonous:** Cardiac glycosides; toxic to cattle, sheep, goats and horses. **Irritant:** Skin, eyes (sap).

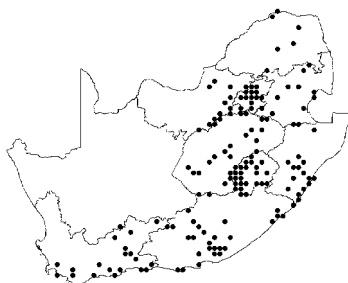


Cuscuta campestris & *C. suaveolens*

common & lucerne dodder

CONVOLVULACEAE

Description: Slender, leafless, parasitic herbs with yellow or whitish, twining stems up to 2 m high and forming dense patches up to 6 m across. **Leaves:** None; leaves in illustration belong to the host plant. **Flowers:** Whitish (A), ± 3 mm long, Nov–Apr. **Fruits:** Greenish yellow capsules (B), ± 3 mm long. **NB:** *C. campestris* (illustrated) has small flowers (1.5–3 mm long) in compact, globose clusters; *C. suaveolens* has larger flowers (3–4 mm long) in loose clusters. **Invades:** A wide range of habitats, particularly riverbanks, other moist sites and irrigated croplands. **Origin:** N and S America respectively.

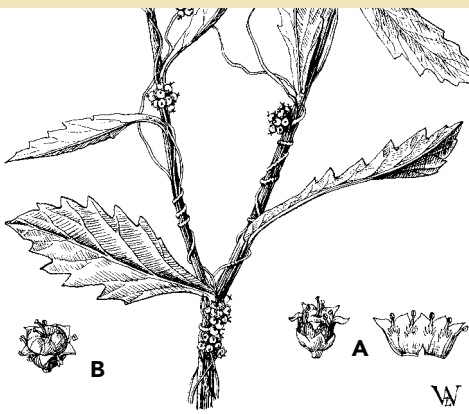




Geoff Nichols



Geoff Nichols



Climbers & Scramblers

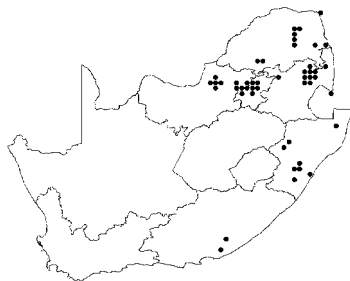


Dolichandra unguis-cati (= *Macfadyena unguis-cati*)

cat's-claw creeper

BIGNONIACEAE

Description: Evergreen, woody-stemmed, tendrils climber to 9 m or higher; roots tuberous (A). **Leaves:** Bright green, with 2 leaflets and a terminal, 3-parted, claw-like tendril (B); leaflets lanceolate to oblong, 2.5–8 cm long, margins entire to slightly wavy. **Flowers:** Bright yellow, trumpet-shaped, to 8 x 10 cm, axillary, solitary or in clusters of 2 or 3, Sep–Feb. **Fruits:** Brown, leathery capsules (C), flattened, to 30 x 1.2 cm, splitting open to release many, papery, winged seeds (D). **Cultivated for:** Ornament. **Invades:** Forest margins, woodland, plantations, urban areas, watercourses. **Origin:** Mexico, C and S America.



Harrisia bonplandii (= *H. balansae*)

angular cactus, strangler cactus

CACTACEAE

Description: Spiny, robust, succulent shrub 4–25 m high, with long, clambering, markedly angular stems; stem sections 3–4(–5) angled, green, 3–4(–5) cm wide; central spine 2.5–3 cm long; radials 6–8, ± 1 cm long.

Flowers: White, showy, 15–20 cm long, nocturnal.

Fruits: Red, globose, strongly tuberclad, succulent berries, up to 7 cm across, with conspicuous scales.

Cultivated for: Ornament. **Invades:** Dry savanna, pastoral land. **Origin:** Argentina, Brazil, Bolivia, Paraguay. **NB:** Compare with the similar *H. pomanensis* and *H. tortuosa* which are smaller succulent shrubs (see pages 150 and 152).

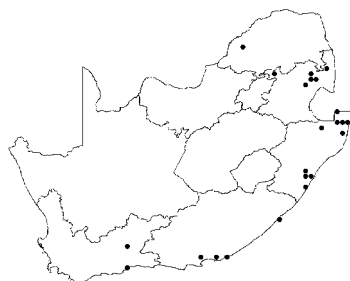


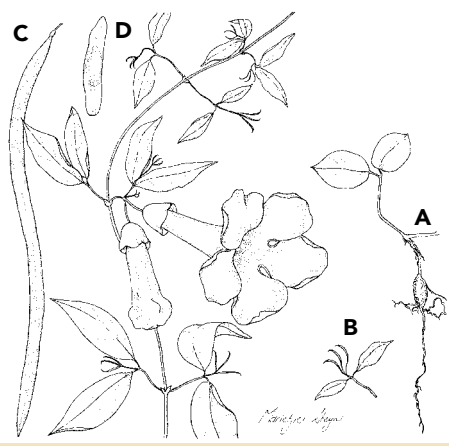
Hylocereus undatus

creeping queen of the night, dragon fruit

CACTACEAE

Description: Sprawling or climbing, producing many stems to 10 m or more in length; stems jointed, thick, heavy, 3-winged, with wavy, horny margins; spines in groups of 1–3, to 3 mm long. **Leaves:** None. **Flowers:** White, showy, to 30 x 20 cm, scented, nocturnal. **Fruits:** Red, smooth, succulent berries, globose to oblong, 5–12 x 4–9 cm, with large, fleshy scales, white inside with small black seeds. **Cultivated for:** Ornament, edible fruit. **Invades:** Savanna, coastal bush. **Origin:** Uncertain, probably C America and W Indies. **NB:** Sometimes misidentified as *H. triangularis*: stem margins straight, not horny, spines in groups of 6–8, smaller flowers.





Peter Shisani



Helmuth Zimmermann



Geoff Nichols



Climbers & Scramblers



Ipomoea alba

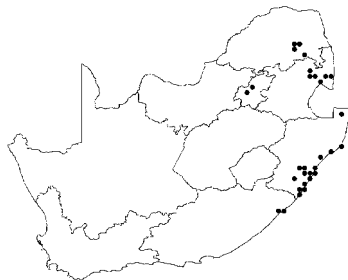
moonflower

CONVOLVULACEAE

Description: Subwoody, hairless, annual or perennial climber with milky latex, stems ~ prickly, up to 5 m long.

Leaves: Bright green, broad ovate, entire or 3-lobed, 6–20 cm long. **Flowers:** White (A: bud), often banded with green, up to 12 cm long, fragrant, opening at night; outer sepals with a long, awn-like appendage 4–10 mm long at the apex, Oct–Jun(–all year). **Fruits:** Ovoid capsules (**B**), ± 2 cm long. **Cultivated for:** Ornament.

Invades: Forest, woodland, wasteland, riverbanks, wetlands, coastal dunes. **Origin:** Tropical America (Florida, Mexico, C & S America, W Indies). **Poisonous.**



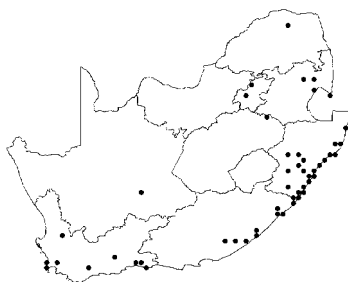
Ipomoea indica

morning glory

CONVOLVULACEAE

Description: Herbaceous, perennial twiner with hairy stems to 6 m or more. **Leaves:** Bright green, sparsely hairy, ovate, entire or 3-lobed, 5–17 cm long. **Flowers:** Purplish blue, blue, reddish or white, sometimes with contrasting stripes, funnel-shaped, to 8.5 cm long, opening during the day, Nov–May(–all year);

sepals long-tapering, 14–22 mm long, with flattened hairs at base. **Fruits:** Globose capsules, 1 cm across, seeds hairless. **Cultivated for:** Ornament. **Invades:** Woodland, wasteland, roadsides, riverbanks, coastal dunes. **Origin:** Uncertain, pantropical. **Poisonous.**



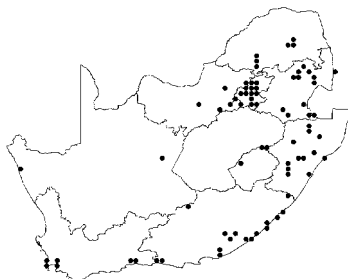
Ipomoea purpurea

morning glory

CONVOLVULACEAE

Description: Herbaceous, annual twiner with hairy stems to 3 m or more. **Leaves:** Bright green, sparsely hairy, ovate, entire or 3-lobed, 4–15 cm long. **Flowers:** Purplish blue, blue, magenta or white, sometimes with contrasting stripes, funnel-shaped, to 8.5 cm long, opening during the day, Nov–May(–all year);

sepals pointed but not long-tapering, 10–15 mm long, bristly at base. **Fruits:** Globose capsules, 1 cm across. **Cultivated for:** Ornament. **Invades:** Woodland, wasteland, arable land, roadsides, riverbanks. **Origin:** Mexico, C and S America, W Indies. **Poisonous.**





Climbers & Scramblers

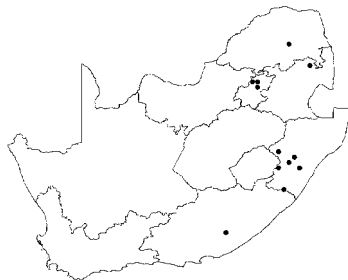


Lonicera japonica

Japanese or Hall's honeysuckle

CAPRIFOLIACEAE

Description: A vigorous, semi-evergreen or evergreen climber up to 9 m high; stems hollow, twining, hairy; flowers fragrant. **Leaves:** Dark green and hairless above, pale and slightly downy beneath, ovate, 3–9 cm long. **Flowers:** White, ageing to yellow; floral tube (corolla) slender, hairy, 2-lipped, up to 4 cm long; in axillary pairs, subtended by leafy, ovate bracts 1–2 cm long, Oct–Mar. **Fruits:** Black berries (A), ±1 cm across. **Cultivated for:** Ornament, screening. **Invades:** Woodland, riverbanks. **Origin:** Japan, Korea, China.

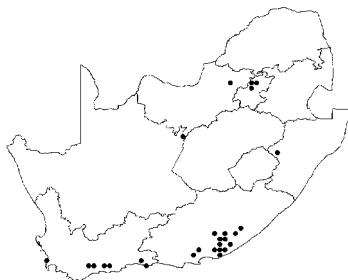


Passiflora caerulea

blue passion flower

PASSIFLORACEAE

Description: Hairless, perennial, tendril climber, stems cylindrical or slightly angular, to 5 m or higher. **Leaves:** Greyish or bluish green, usually deeply 5- to 7-lobed, lobes lanceolate and sharp-pointed, margins entire; stipules large and sickle-shaped, 1–2 cm long. **Flowers:** Sepals and petals white to pinkish inside; coronal filaments purple at base, white in middle, blue at apex, distinctly shorter than petals, Aug–Mar. **Fruits:** Green turning yellow or orange, ovoid berries (A), reddish inside, to 6 cm long. **Cultivated for:** Ornament. **Invades:** Forest margins, bush clumps, roadsides, riverbanks. **Origin:** S America. **Poisonous.**

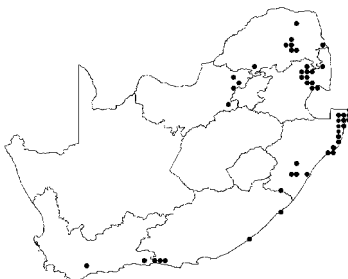


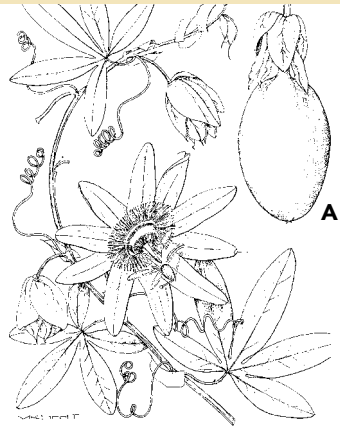
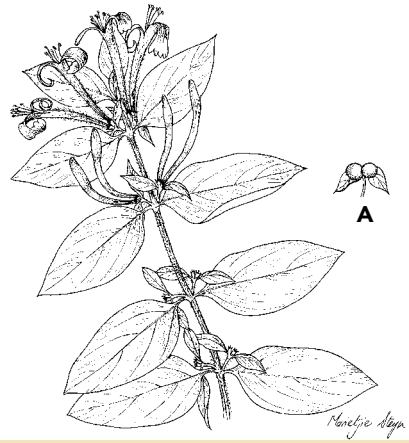
Passiflora edulis

purple granadilla, passion fruit, guavadilla

PASSIFLORACEAE

Description: Hairless, perennial, tendril climber up to 15 m high. **Leaves:** Glossy dark green above, deeply 3-lobed, lobes elliptic to oblong, apex pointed, shortly tapering, margins toothed; stipules small, linear-lanceolate to 1 cm long. **Flowers:** White, except base of corona which is purple; coronal filaments curly, as long as petals; 5–7.5 cm across, Oct–Apr. **Fruits:** Globose berries (A), greenish yellow turning deep purple or yellow (guavadilla/forma flavicarpa), hairless, to 6 cm long, pulp sweet and edible. **Cultivated for:** Edible fruits, ornament. **Invades:** Forest margins, plantations, riverbanks. **Origin:** Brazil.





Climbers & Scramblers

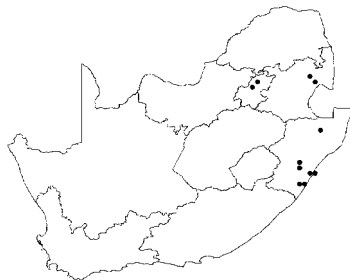


Passiflora suberosa

devil's pumpkin, indigo berry

PASSIFLORACEAE

Description: Hairless to densely hairy, perennial, tendrill climber, to 6 m high; stems ~ angular, corky when older. **Leaves:** Ovate and entire to deeply 3-lobed, margins entire; lobes triangular to lanceolate, pointed to tapering; stipules small, linear, 5–8 mm long. **Flowers:** Sepals greenish yellow, petals absent; coronal filaments white, yellow at the apex, purple below; 2–3 cm across, Nov–Apr. **Fruits:** Globose berries, green turning purple or black, to 2 cm long. **Cultivated for:** Ornament. **Invades:** Forest, woodland, riverbanks, coastal dunes. **Origin:** N, C and S America, W Indies. **Poisonous:** Unripe fruit, leaves.

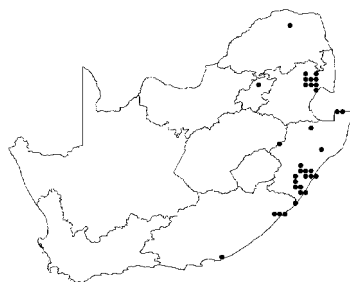


Passiflora subpeltata

granadina

PASSIFLORACEAE

Description: Hairless, perennial, tendrill climber; stems cylindrical, to 5 m high. **Leaves:** Rather shallowly 3-lobed, bluish or greyish green beneath, margins entire or with minute, glandular protuberances in or near the lobe sinuses; lobes elliptic to oblong, rounded or pointed, not long-tapering; stipules large, ovate-oblong, 1.5–4 cm long. **Flowers:** Pure white to 5 cm across, Nov–Jun. **Fruits:** Berries, green becoming yellowish, ellipsoid or globose, ~ leathery, about 5 cm long. **Cultivated for:** Ornament. **Invades:** Woodland, bush clumps, roadsides, riverbanks. **Origin:** Mexico, C and S America. **Poisonous?**

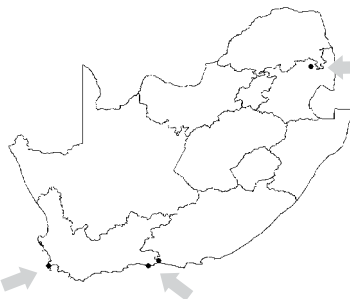


Passiflora tarminiana & *P. tripartita* var. *mollissima*

banana poka, bananadilla

PASSIFLORACEAE

Description: Softly hairy, perennial, tendrill climbers to 20 m high. **Leaves:** Dark green and downy (*P. tripartita*) to smooth (*P. tarminiana*) above, downy and paler below, deeply 3-lobed, margins toothed; stipules: 13–19 mm wide, persistent (*P. tripartita*); 2–3 mm wide, deciduous (*P. tarminiana*). **Flowers:** Light pink to magenta, corolla (petals): bell-shaped in *P. tripartita*; spreading, reflexed in *P. tarminiana*, Dec–Mar. **Fruits:** Oblong, green turning yellow, to 13 cm long. **Cultivated for:** Ornament, edible fruits. **Invades:** Forest margins. **Origin:** S America. **NB:** *P. tarminiana* is a distinct species and not a cultivar.





Stefan Nesper



Geoff Nichols



P. tripartita var. *mollissima*

Samuelistok, Wikimedia Commons, CC-BY-SA-3.0



P. tarminiana

Geoff Nichols

Climbers & Scramblers



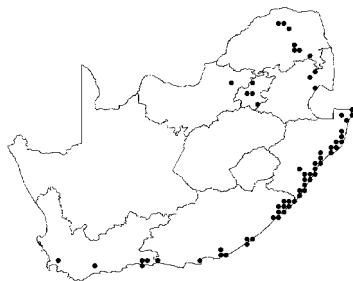
Pereskia aculeata

pereskia, Barbados gooseberry

CACTACEAE

Description: Spiny, shrubby to clambering vine with long, whip-like branches, 2–10 m or higher, resembling *Bougainvillea*; young stems and leaves semi-succulent with pairs of short, hooked spines in the leaf axils; older stems woody with clusters of hard, straight spines 3–4 cm long. **Leaves:** Bright green, glossy. **Flowers:** White, cream or yellowish, lemon-scented, Mar–Jul.

Fruits: Green turning yellow, spiny, succulent berries, ~ 2 cm across. **Cultivated for:** Ornament, security hedging. **Invades:** Forest margins and gaps, plantations, watercourses, wooded ravines. **Origin:** S America, W Indies.

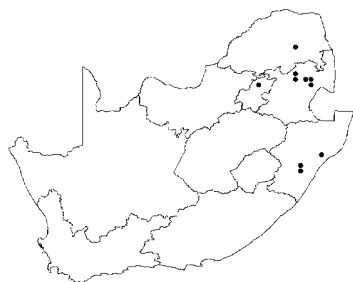


Pueraria montana var. *lobata*

kudzu vine

FABACEAE

Description: Perennial, very long-running, hairy vine up to 18 m high, somewhat woody, with tuberous roots; leaf stalks and stems with rusty-brown hairs. **Leaves:** Light green, finely hairy, 3-foliolate, leaflets entire or shallowly lobed, 7–15 cm long, abruptly sharp-pointed but not bristle-tipped (as in *Mucuna* spp). **Flowers:** Reddish purple, fragrant, in spikes (A) up to 30 cm long, Mar–Apr. **Fruits:** Flattened pods (B), 5–13 cm long, covered with long, rusty-brown hairs. **Cultivated for:** Ornament, shade, soil-binding, edible roots. **Invades:** Forest margins and gaps, riverbanks. **Origin:** Temperate and tropical Asia.



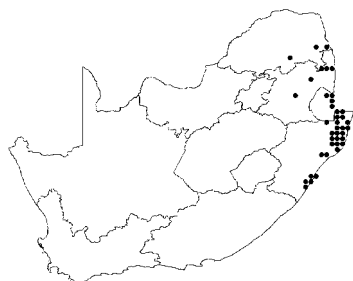
Senna bicapsularis

rambling cassia

FABACEAE

Description: Hairless shrub, often scrambling or climbing, 1.5–9 m high. **Leaves:** Green, margins yellow, leaflets in (2–)3 pairs (compare with *S. pendula*), 1–3 cm long, tips rounded, petiolar gland absent, rachis with a gland between lowest pair of leaflets only.

Flowers: Yellow, stalks of open flowers less than 1 cm long (compare *S. pendula*); axillary racemes 6–12 cm long, towards ends of branches, May–Oct. **Fruits:** Pods (A), ~ straight, cylindrical, ~ inflated, rounded at apex, septate, 5–15 cm long. **Cultivated for:** Ornament, hedging. **Invades:** Savanna, coastal bush, riverbanks. **Origin:** S America, W Indies. **Poisonous.**





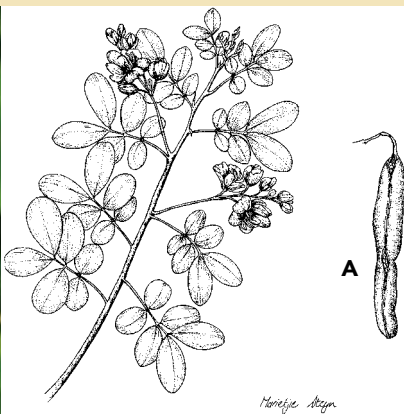
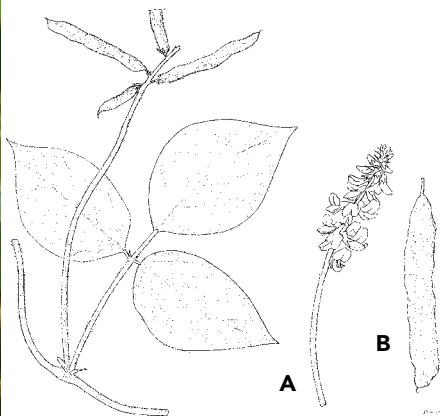
Geoff Nichols



after F. Sestl



Bongani Masele



Marietje Meyn

Climbers & Scramblers

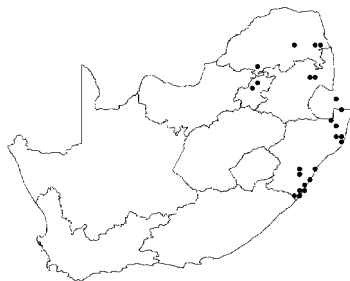


Senna pendula var. *glabrata*

climbing cassia, Easter cassia

FABACEAE

Description: Hairless or softly hairy, scandent shrub or small tree 2–4 m high. **Leaves:** Green, margins yellow, leaflets in 4–5 pairs, 1–4 cm long, tips rounded, petiolar gland absent, rachis with a gland between the lowest pair of leaflets only. **Flowers:** Bright yellow, in axillary racemes 4–10 cm long, stalks of open flowers 2–3 cm long; Apr–May(–all year). **Fruits:** Pods (A), ~ straight to slightly curved, pendulous, cylindrical, ~ inflated, rounded apically, septate within, 18–20 cm long. **Cultivated for:** Ornament. **Invades:** Savanna, watercourses. **Origin:** Mexico, C and S America, W Indies. **Poisonous?**

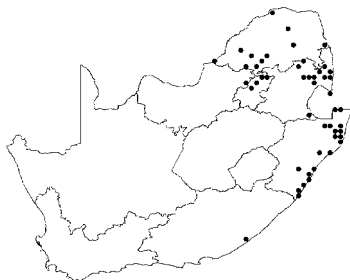


Solanum seafortianum

potato creeper

SOLANACEAE

Description: Slender, herbaceous or softly woody climber or trailer 2–3 m or higher, without hairs or thorns. **Leaves:** Bright green, thinly textured, deeply lobed into leaflets, leaflets mostly unequal with margins entire and often wavy. **Flowers:** Blue to purple, showy, ~ 2 cm across, in long, drooping clusters, Dec–Mar. **Fruits:** Small, shiny berries, 5–10 mm across, green turning red, in pendulous bunches. **Cultivated for:** Ornament. **Invades:** Woodland, bush clumps, riverine forest. **Origin:** Mexico, C and S America, W Indies. **Poisonous:** Whole plant; toxic to livestock.

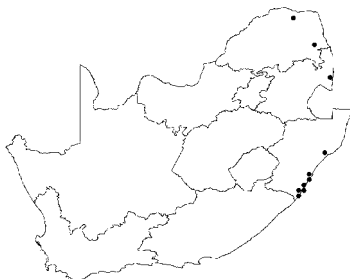


Syngonium podophyllum

arrowhead-vine, goose foot

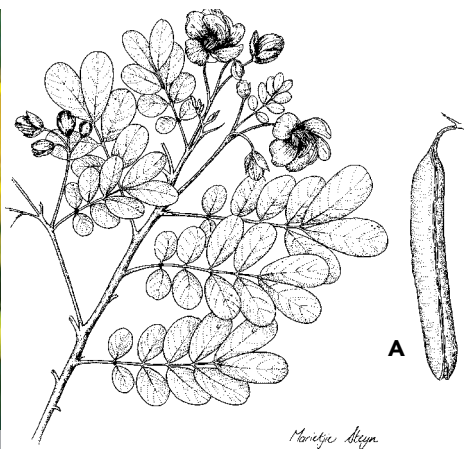
ARACEAE

Description: Evergreen, woody-stemmed epiphyte with milky sap; young stems loose, climbing, becoming adpressed to trees when adult. **Leaves:** Green, sometimes with white, yellow or pink markings; leaf blade of juvenile plant 7–14 cm long, heart-shaped, of pre-adult arrow-shaped; adult leaf with stalk 15–60 cm long with (5–)7–9 glossy leaflets to 30 cm long. **Flowers:** Greenish white, on a column to 9 cm long within a fleshy spathe. **Fruits:** Berries, enclosed in red, fruiting spathe. **Cultivated for:** Ornament. **Invades:** Forest, moist shaded sites. **Origin:** Tropical America. **Poisonous & irritant:** Internal irritation (leaves).





Geoff Nichols



Mimosa Steyn



Hlobosile Sithole



Climbers & Scramblers

Billardiera heterophylla

bluebell creeper

PITTOSPORACEAE

Description: Perennial, evergreen, twining climber or rounded shrub 2–3 m high, stoloniferous; new shoots silky hairy; older stems angular, reddish brown. **Leaves:** Light to dark green, glossy, hairless, alternate, 3–5 x 0.5–2 cm, juvenile leaves deeply lobed, mature leaves entire. **Flowers:** Bright blue (rarely pink or white), narrowly bell-shaped with 5 spreading petals, 8–12 mm long, in pendent clusters, spring–summer. **Fruits:** Berry, cylindrical, to 2.5 cm long, green turning black, blue or purple. **Cultivated for:** Ornament. **Invades:** Urban areas (WC: Cape Town); potentially invasive in fynbos, forest, watercourses. **Origin:** SW Australia. **Irritant:** Skin (sap).



Photos: SANBI ISP WC

Convolvulus arvensis

field bindweed

CONVOLVULACEAE

Description: Slender, prostrate or twining, herbaceous perennial with stems up to 3 m long and deep, spreading roots. **Leaves:** Bright green, sparsely hairy to hairless, ovate-oblong with arrow-shaped bases, up to 6 cm long. **Flowers:** Pale pink or white, sometimes with red stripes, 3 cm across, usually solitary on long stalks, Oct–Mar. **Fruits:** Brown capsules splitting into 4 valves, 4-seeded. **Use:** Honey source. **Invades:** Roadsides, waste places, agricultural crop lands, disturbed grassland (all SA provinces). **Origin:** Europe, Asia.

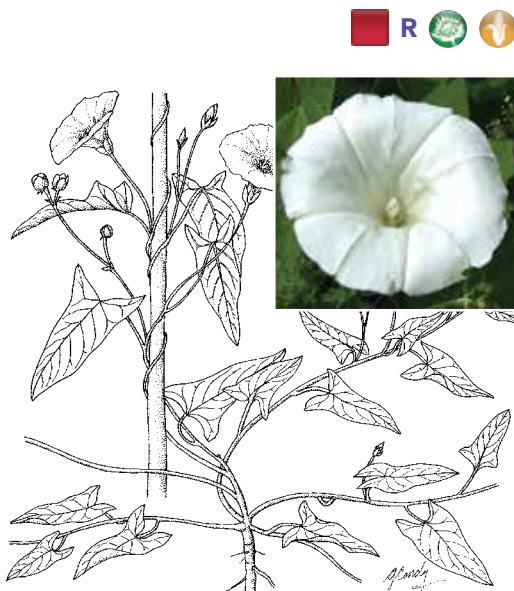


Photo: Jerzy Opiola, Wikimedia Commons, CC-BY-SA-3.0

Diplocyclos palmatus

lollipop climber

CUCURBITACEAE

Description: Perennial climber to 6 m high, stems herbaceous and green-spotted, tendrils split in two at the tips, rootstock fleshy. **Leaves:** Bright green, broadly ovate in outline, deeply palmately 5-lobed, 4–14 x 4–15 cm, upper surface hairy, lower surface hairless except for a few spines on veins, stalks 2–8 cm long. **Flowers:** White, cream or greenish yellow, in clusters of 1–8, Mar–Apr. **Fruits:** Berry-like, ~ globose, ± 2 cm across, green turning bright red with silver-white stripes, in clusters of 2–5. **Cultivated for:** Ornament; medicinal purposes. **Invades:** Moist forest, riverbanks (L, M, KZN). **Origin:** E Africa, Asia, Australia. **Poisonous:** Whole plant.



Photos: Geoff Nichols

Epipremnum aureum (= *E. pinnatum* cv. Aureum)

silver vine, golden pothos, devil's-ivy

ARACEAE

Description: Perennial, vigorous, ever-green, growing to 20 m high by means of aerial climbing roots; trailing stems take root when they touch the ground. **Leaves:** Bright green, glossy, with cream or yellow markings, leathery; young leaves ovate, <20 cm long, margins entire; adult leaves up to 100 x 45 cm, irregularly divided, lobes not reaching the midrib (pinnatifid). **Flowers:** Cream inside a green spathe up to 23 cm long. **Fruits:** Small berries, 1–2-seeded. **Cultivated for:** Ornament. **Invades:** Forest margins, disturbed sites (KZN, EC). **Origin:** South Pacific (Society Islands: Moorea). **Poisonous & irritant:** Intense internal irritation (leaves).



Photos: Desika Moodley

Climbers & Scramblers



Hedera canariensis

Canary ivy, Madeira ivy, Algeria ivy

ARALIACEAE

Description: Evergreen perennial, climbing to 10 m by means of rootlets on the stems, or spreading over the ground to form a carpet. **Leaves:** Bright to mid-green, sometimes with broad, silvery-grey or white edges, glossy when new, becoming leathery with age, mostly wider than long, unlobed to shallowly 3-lobed; hairs on juvenile leaves reddish. **Flowers:** Greenish, in terminal, globular umbels, seldom flowering. **Fruits:** Drupes, black when ripe. **Cultivated for:** Ornament, groundcover. **Invades:** Urban open space, streambanks, wooded areas (KZN, WC). **Origin:** SW Europe, N Africa, Canary Isles. **Poisonous. Irritant:** Skin (sap).



Hedera helix

English ivy

ARALIACEAE

Description: Evergreen perennial, climbing to 30 m by means of rootlets on stems, or spreading over the ground in extensive carpets. **Leaves:** Dark green, often with paler veins, glossy, becoming leathery; mostly longer than wide; very variable; leaf forms include a 3- to 5-lobed leaf (most common) and an unlobed, rounded leaf common on flowering shoots; hairs on juvenile leaves greyish white. **Flowers:** Greenish, in terminal, globular umbels, Mar–Jul. **Fruits:** Drupes, black, 8–10 mm across. **Cultivated for:** Ornament, groundcover. **Invades:** Urban areas, streambanks, wooded areas (EC, WC). **Origin:** Europe, N Africa, Asia. **Poisonous. Irritant:** Skin (sap).



Thunbergia grandiflora

blue trumpetvine

ACANTHACEAE

Description: Evergreen perennial, climbing to 15 m high or more; young stems green, hairy, square in cross-section; root system tuberous; spreads from seed, stem fragments, tubers and stolons.

Leaves: Green, roughly hairy, triangular to ovate, margin entire, toothed or lobed, up to ~20 x 14 cm, on long stalks.

Flowers: Blue, with pale yellow or whitish throats, trumpet-shaped, in elongated, drooping clusters. **Fruits:** Capsule, 2-valved, with a globose base and long-tapering beak, up to 5 cm long.

Cultivated for: Ornament. **Invades:** Forest margins, streambanks, disturbed sites around habitation (M, KZN). **Origin:** India, Indo-China, China.



Geoff Nichols

Tropaeolum speciosum

Chilean flame creeper, flame nasturtium

TROPAEOLACEAE

Description: Perennial, herbaceous climber with twining leaf stalks, up to 3 m high or more; spreads from ~ fleshy, creeping rhizomes and deep-rooting tubers. **Leaves:** Mid- to blue-green, palmately lobed into 5–7 stalkless, obovate to spatulate (spoon-shaped) leaflets, downy beneath; leaf stalks twining, usually much longer than blades; stipules large, persistent, deeply divided into lobes. **Flowers:** Brilliant red, to 3.5 cm long, 5-petalled, long-spurred, in pendent clusters, on stalks 3–13 cm long, spring–summer. **Fruits:** Blue, fleshy, surrounded by deep red, persistent calyx. **Cultivated for:** Ornament. **Potentially invasive:** In forest. **Origin:** Chile.



Michael Below

Trevor James

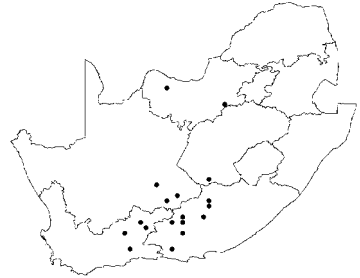
Trees & Shrubs Succulent: mostly < 1m high



Cylindropuntia pallida (C. rosea misapplied)
pink-flowered sheathed cholla

CACTACEAE

Description: Very densely spiny cactus 20–150 cm high; stem sections cylindrical, 10–15 x 1.6–2.5 cm; spines barbed, 1–4 cm long, covered with whitish, papery sheaths; spines obscuring the stems. **Flowers:** Pink, ± 4 cm across, Nov–Jan. **Fruits:** Yellow, tuberculate (with rounded protuberances), spiny, succulent berries, 2–4.5 cm long, at tips of cladodes. **Cultivated for:** Ornament. **Invades:** Dry savanna and karoo. **Origin:** Mexico.



Barbara Mashope

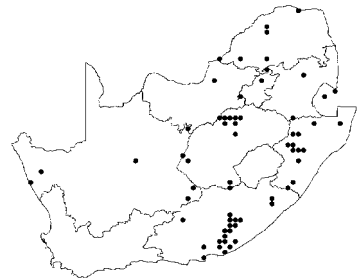
Irritant: Skin (glochids). **NB:** Distinguished from *C. fulgida* var. *fulgida* by fruits not in chains and from *C. tunicata* by pink flowers (not yellow-green) and spiny fruits (becoming less spiny with age), which are longer than broad.

Opuntia aurantiaca

jointed cactus

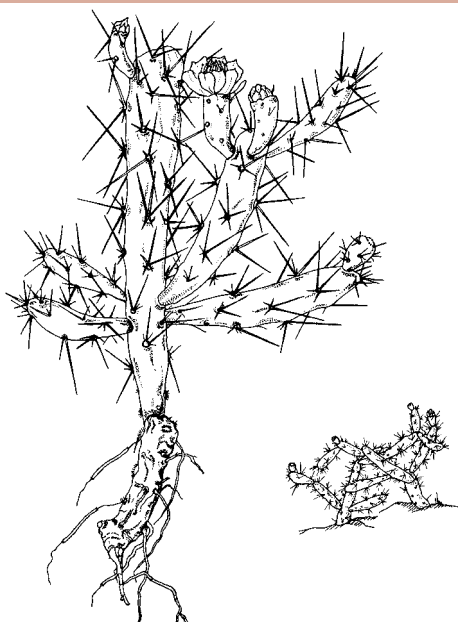
CACTACEAE

Description: Spiny, much-branched, spreading, succulent shrublet, 30–50(–200) cm high with underground tubers; seldom exceeds 50 cm high in dry, open veld but up to 2 m when supported in dense bush; stem sections cylindrical to slightly flattened, bright green, sometimes tinged a reddish purple, 6–20 x 1–3 cm, armed with sturdy, rigid, barbed spines 1–3 cm long. **Flowers:** Bright yellow, outer segments red, Nov–Jan. **Fruits:** Reddish, succulent berries; sterile.



Dan'sile Cindi

Cultivated for: Ornament. **Invades:** Karoo, savanna, pastoral land. **Origin:** E Argentina, S Uruguay. **Irritant:** Skin (glochids).



Trees & Shrubs Succulent: mostly < 1m high



Opuntia humifusa

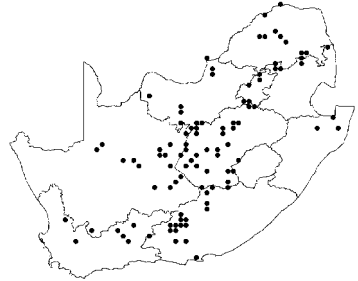
creeping prickly pear

CACTACEAE

Description: Low, spreading cactus to 30 cm high; flattened stem sections (cladodes), usually no more than two pads high, green to grey-green, round to obovate, to 15 cm long; spines absent or with 1–2(–3) main spines, on upper half of cladode; areoles with dense glochids.

Leaves: Small, early deciduous. **Flowers:** Golden-yellow usually with orange or red throat, to 10 x 8 cm, floral tube long and narrow, Oct–Dec. **Fruits:** Red or purple, succulent berries, narrow, elongated, to 6 cm long.

Cultivated for: Ornament. **Invades:** Dry grassland, savanna, karoo. **Origin:** C and E USA. **Irritant:** Skin (glochids).



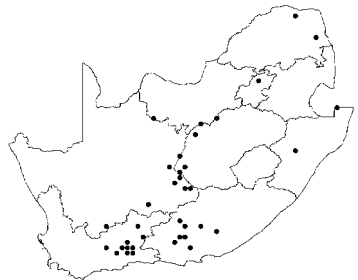
Opuntia microdasys

yellow bunny-ears, teddy-bear cactus

CACTACEAE

Description: Erect to sprawling cactus up to 60 cm high with many small, circular to elliptic-obovate, flattened stem sections (cladodes), 7–10 x 4–8 cm; new pads emerge in pairs which look like the ears of rabbits (hence the common name); spines absent; areoles numerous, small, with dense clusters of yellow, reddish or whitish glochids to 3 mm long. **Flowers:** Yellow, 3–5 cm across, spring. **Fruits:** Red, succulent berries, spherical to ovoid, ± 3 cm across; possibly sterile.

Cultivated for: Ornament. **Invades:** Dry and rocky habitats, disturbed sites around human habitation. **Origin:** Mexico. **Irritant:** Skin (glochids).



Opuntia pubescens

velvet bur cactus

CACTACEAE

Description: Low, almost prostrate, densely branching cactus up to 20 cm high with brittle, spiny, softly hairy, almost cylindrical stem sections, 2–5(–8) x 1–3 cm; spines 2–5 or more at each areole, 1–3 cm long, whitish or brownish; glochids numerous, yellow. **Flowers:** Yellow. **Fruits:** Red, succulent berries, 2–2.5 cm long. **Cultivated for:** Ornament. **Invades:** Dry and rocky habitats around human habitation. **Origin:** Mexico and S America. **Irritant:** Skin (glochids). **NB:** Differs from *O. aurantiaca*, by its more numerous, slender spines, and velvety stem sections, particularly the growth tips.





Hildegard Klein



Dan'sile Cindi

Helmuth Zimmermann



Trees & Shrubs Succulent: mostly < 1m high



Opuntia salmiana

bur cactus

CACTACEAE

Description: Low, much-branched cactus 30–50 cm high with slender, cylindrical stem sections up to 25 x 1 cm; areoles small, woolly; spines bristle-like, 0 or 3–5 per areole, to 1.5 cm long; glochids yellow. **Leaves:** Small, 1–2 mm long, early deciduous. **Flowers:** Pale yellow to white, 2–3.5 cm across, buds pinkish or red. **Fruits:** Red, succulent berries, oblong-ellipsoid, ± 10 mm across. **Cultivated for:** Ornament. **Invades:** Disturbed sites around human habitation. **Origin:** Argentina, Bolivia, Paraguay. **Irritant:** Skin (glochids). **NB:** Differs from *Cylindropuntia leptocaulis* by having larger flowers and unsheathed spines.

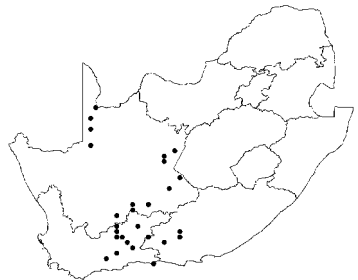


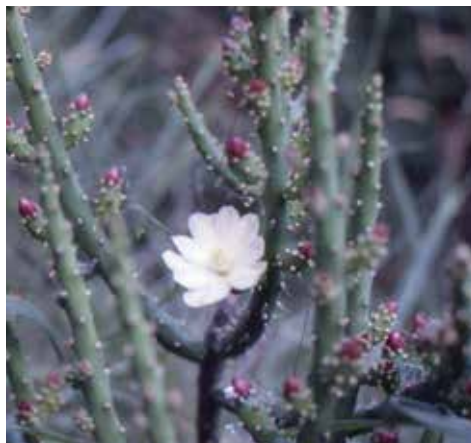
Tephrocactus articulatus

pine-cone cactus, paper-spine cholla

CACTACEAE

Description: Low-growing, clump-forming cactus up to 50 cm high; stem sections globose to cylindrical, 10 x 3–6 cm, dull greyish brown; areoles large, bearing numerous reddish brown glochids; spines usually absent (var. *articulatus*), or when present, are flat, papery, up to 50 x 7 mm, and occur in groups of 1–4 (var. *papyracanthus*). **Flowers:** White to pinkish, 3–4 cm across. **Fruits:** Globose, dry-walled, ± 1 cm long; seeds corky and winged, dispersed by wind and water. **Cultivated for:** Ornament. **Invades:** Dry and seasonal watercourses, drainage lines, disturbed sites around human habitation. **Origin:** W Argentina. **Irritant:** Skin (glochids).





var. *articulatus*



var. *papyracanthus*



Alan Wood



Haylee Kaplan

Trees & Shrubs Succulent: 1–10 m high or more

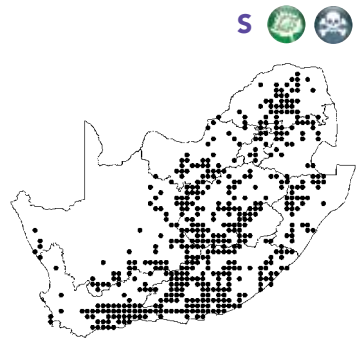


Agave americana var. *americana*

American agave

AGAVACEAE

Description: Evergreen shrub with thick, heavy leaves in a basal rosette up to 2 m high; suckers from the base; flowering pole 5–9 m tall. **Leaves:** Light bluish grey, with toothed margins (A) and terminal spine; leaves erect at first, becoming reflexed and flopping over to one side; variegated forms occur. **Flowers:** Pale yellow (B), ± 8 cm long, Dec–Mar. **Fruits:** Capsules (C), ± 4 cm long. **Cultivated for:** Fodder, security hedging, fence posts. **Invades:** Dry habitats, drainage lines. **Origin:** Mexico. **Irritant:** Skin (sap). **NB:** Weakly invasive; mainly close to plantings. Known as ‘garingboom’ in the Karoo.

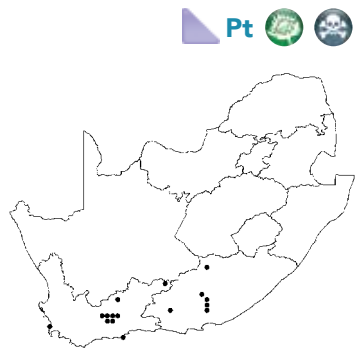


Agave americana var. *expansa*

spreading century-plant

AGAVACEAE

Description: Evergreen shrub with thick, heavy leaves in a basal rosette up to 2 m high; suckers from the base; flowering pole 5–9 m tall; much neater in appearance than var. americana. **Leaves:** Light bluish grey, with toothed margins and terminal spine; leaves erect, rigidly spreading, not becoming reflexed and flopping over to one side. **Flowers:** Pale yellow, ± 8 cm long, Dec–Mar. **Fruits:** Capsules, ± 4 cm long. **Cultivated for:** Fodder, ornament. **Invades:** Dry and rocky habitats, drainage lines. **Origin:** Mexico. **Irritant:** Skin (sap). **NB:** Grows much faster than var. americana and less prone to Agave weevil attack.

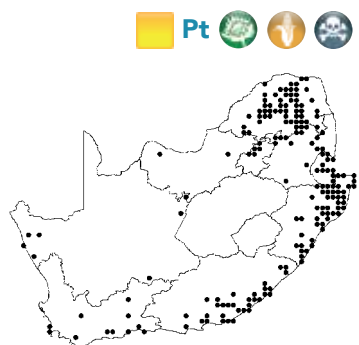


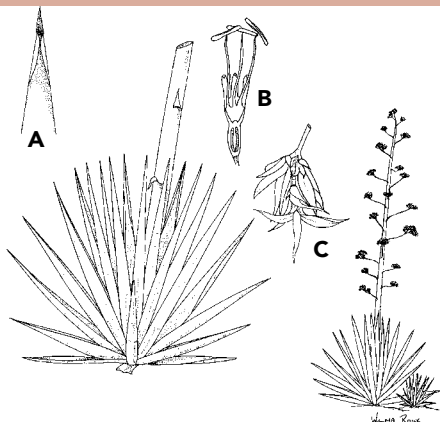
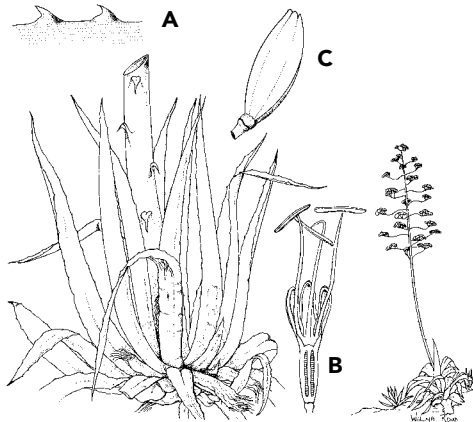
Agave sisalana

sisal

AGAVACEAE

Description: Evergreen shrub with thick, sword-shaped leaves in a basal rosette to 2 m high; suckers from base; flowering pole to 6 m tall. **Leaves:** Bright green, minutely toothed to smooth margins, terminal spine (A); rigidly spreading to slightly reflexed. **Flowers:** Greenish yellow (B), 10 cm long, Dec–Mar. **Fruits:** None; flowers replaced with plant-like bulbils (C), ± 15 cm long. **Cultivated for:** Fibre, security hedging. **Invades:** Savanna, erosion channels, watercourses. **Origin:** Mexico. **Irritant:** Skin (sap). **NB:** *Furcraea foetida* has more reflexed leaves with marginal teeth on lower half.





Trees & Shrubs Succulent: 1–10 m high or more



Austrocylandropuntia cylindrica (= *Opuntia cylindrica*)

cane cactus

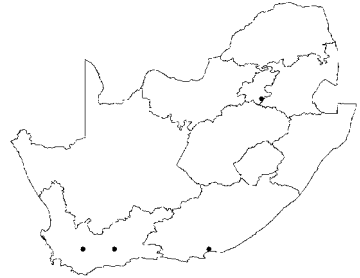
CACTACEAE

Description: Spiny, much-branched, succulent shrub, up to ± 2 m high, developing a woody trunk with age; stem sections cylindrical, tuberculate (with distinctly diamond-shaped, knobby projections), 3–4 cm broad, dark or glaucous-green; spines in groups of 2–5(–8), straight, yellowish, 1(–3) cm long, without a papery sheath.

Leaves: Up to 1.5 cm long, rather persistent, finally deciduous. **Flowers:** Red, up to 6 cm long.



Haylee Kaplan



Fruits: Green or yellowish green, ovate or urn-shaped, up to 9 cm long. **Cultivated for:** Ornament, hedging. **Invades:** Karoo, savanna, close to human habitation. **Origin:** Ecuador. **Irritant:** Skin (glochids).

Austrocylandropuntia subulata (= *Opuntia exaltata*)

long-spine cactus

CACTACEAE

Description: Spiny, much-branched, succulent shrub, 2–5 m high, developing a trunk with age; stem sections curved, cylindrical, tuberculate (with knobby projections), about 3 cm broad, glaucous-green; spines in groups of 1–2(–3), straight, strong, yellow-brown, up to 5 cm long, without a papery sheath. **Leaves:** Elongated, 3–6(–12) cm long, curved, fleshy, persistent. **Flowers:** Red, orange or greenish yellow, up to 7 cm long. **Fruits:** Green, pear-shaped, about 9 cm long, mostly sterile.



Cultivated for: Ornament, hedging. **Invades:** Savanna, karoo, grassland, close to human habitation. **Origin:** Peru. **Irritant:** Skin (glochids).



Helmuth Zimmermann



ISSA

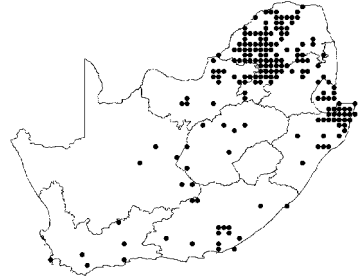




Cereus hexagonus
Cereus hildmannianus subsp. uruguayanus
Cereus jamaru
 queen of the night cacti

CACTACEAE

Description: Spiny trees up to ±15 m high with thick, succulent, columnar branches; with or without well-developed woody trunks; resembling the indigenous *Euphorbia ingens* (naboom) but spines are in groups of 5–10 and cut stems do not exude a milky latex; branches green to blue-green, often strongly glaucous when young, with 4–12 prominent ribs, sometimes broken and wavy in monstrous forms. **Leaves:** None. **Flowers:** White, showy, up to 25 cm long, nocturnal, Nov–Feb. **Fruits:** Yellowish, orange, pink or red, succulent berries, ± 6 cm long, white inside with small, black seeds. **Cultivated for:** Ornament, hedging. **Invades:** Savanna, grassland, karoo, rocky ridges. **Origin:** Argentina, Brazil, Paraguay, Uruguay.



C. jamaru is widely invasive across the savanna biome in South Africa and is taxonomically similar to, and difficult to distinguish from, other tree cacti in the *C. hexagonus* complex. Walters et al. 2011, suspect that *C. hildmannianus* subsp. *uruguayanus* (= *C. uruguayanus*) is either naturalised or is interbreeding with naturalised populations of *C. jamaru*. *C. hexagonus* is in cultivation with no known naturalised populations as yet.

Differences between the three species:

C. jamaru and *C. hexagonus* have flowers 20–29 cm long; *C. hildmannianus* subsp. *uruguayanus* has flowers up to 18 cm long. *C. jamaru* fruits split along 1 line from the base; *C. hildmannianus* subsp. *uruguayanus* fruits split open from the apex along 3 lines. Fruit dehiscence of *C. hexagonus* is unknown. Spines are almost lacking in the usual cultivated form of *C. hexagonus*. Stem tissues are scarcely mucilaginous in *C. jamaru* and highly mucilaginous in *C. hildmannianus*.

Biological control: Stem tips are deformed by the introduced mealybug (*Hypogeococcus festerianus*) which effectively stops flowering and fruiting. Eventually the mealybug kills the entire plant.



biological control

Hildegard Klein



monstrous form



Geoff Nichols

Trees & Shrubs Succulent: 1–10 m high or more

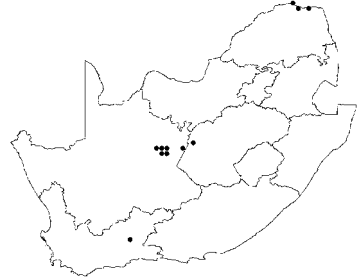


Cylindropuntia fulgida var. *fulgida* (= *Opuntia fulgida*)

chain-fruit cholla

CACTACEAE

Description: Very densely spiny, succulent shrub or small tree 1–3 m high; trunk well-developed; stem sections cylindrical, 10–30 x 2–5 cm; spines barbed, to 4 cm long, covered with white, papery, loosely fitting sheaths; spines almost hiding stems. **Flowers:** Deep pink, petals usually curve backwards with age, Nov–Jan. **Fruits:** Yellow, succulent berries (A), ± 3.5 cm long, obscurely tubercled, forming chains in older plants (B). **Cultivated for:** Ornament. **Invades:** Dry savanna, karoo.



Hildegard Klein

Origin: SW USA, Mexico.

Irritant: Skin (glochids).

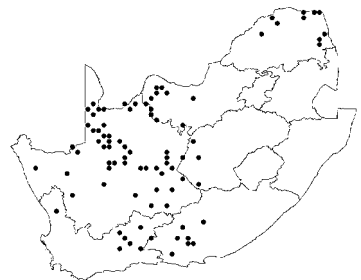
NB: Previously incorrectly known in South Africa as 'rosea cactus' (*Opuntia rosea*).

Cylindropuntia fulgida var. *mamillata*

boxing-glove cactus

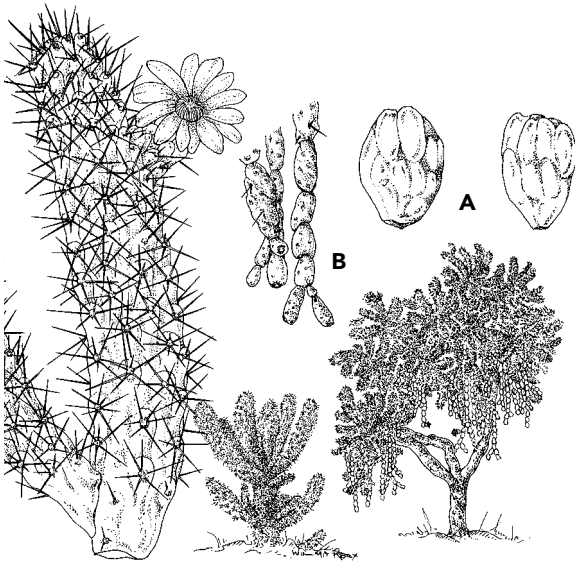
CACTACEAE

Description: Spiny, succulent shrub or small tree 1–3 m high; trunk well-developed; stem sections cylindrical, 10–30 x 2–5 cm; spines barbed, 1–2 cm long, covered with white, papery, tightly fitting sheaths; spines much shorter and not hiding stems as in variety *fulgida*; tubercles nipple-like (mamillate); plants with some stem sections broad, deformed or crested, resembling boxing-gloves. **Flowers:** Deep pink, petals usually curving backwards with age; rarely seen.



Fruits: Yellow, succulent berries, ± 3.5 cm long, strongly tubercled, forming chains in older plants.

Cultivated for: Ornament. **Invades:** Dry savanna, karoo. Map predates biocontrol. **Origin:** SW USA, Mexico. **Irritant:** Skin (glochids).



Hildegard Klein



Trees & Shrubs Succulent: 1–10 m high or more



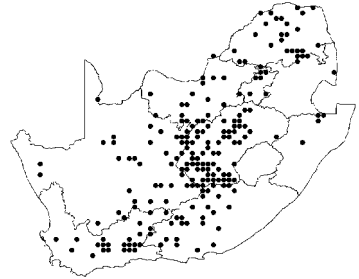
Cylindropuntia imbricata (= *Opuntia imbricata*)

imbricate prickly pear

CACTACEAE

Description: Spiny, much-branched, succulent shrub 1.5–3 m high with an erect main stem; old branches hang downwards; stem sections dull grey-green, cylindrical with raised edges giving the effect of a woven rope, up to 40 x 5 cm wide; spines up to 3 cm long, initially covered with loose, white, papery sheaths.

Leaves: Small, 1–2 cm long, early deciduous. **Flowers:** Purple-red, showy, Oct–Jan. **Fruits:** Yellow, succulent berries (A), ± 5 cm long.



Cultivated for: Ornament.

Invades: Dry savanna, karoo, grassland. **Origin:** SW USA, Mexico.

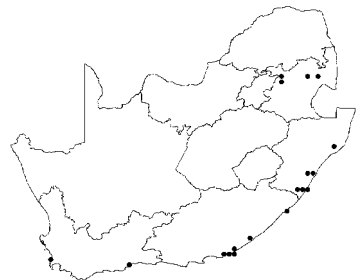
Irritant: Skin (glochids).

Furcraea foetida

Mauritian hemp

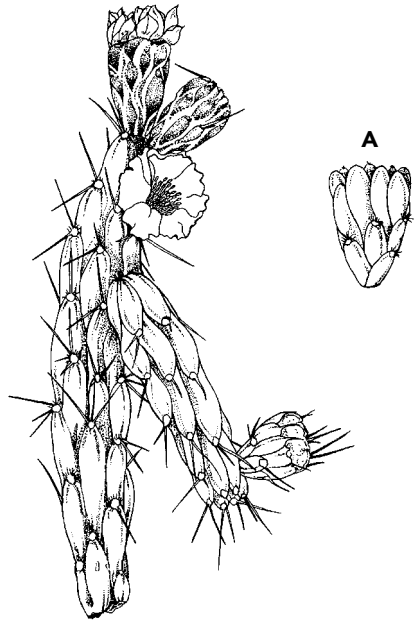
AGAVACEAE

Description: Evergreen shrub with thick, sword-shaped leaves in a basal rosette up to 1.5 m high; suckers from the base; flowering pole 6 m tall or more. **Leaves:** Bright green to yellowish green, with a few widely spaced, marginal teeth 4–10 mm long, especially towards the base; leaf apex with a short, blunt spine; rigidly spreading or recurved. **Flowers:** Greenish white, 4–5 cm long, pendulous, strongly fragrant, summer. **Fruits:** None; flowers replaced with round bulbils. **Cultivated for:** Fibre, security hedge, ornament. **Invades:** Coastal bush, rocky sites, ravines. **Origin:** S America, W Indies.



Geoff Nichols

Irritant: Skin (sap). **NB:** *Furcraea selloa* has regularly spaced teeth along the entire leaf margin; *Agave sisalana* has more rigid leaves which lack marginal teeth; inflorescence has shorter branches and erect flowers.



Geoff Nichols

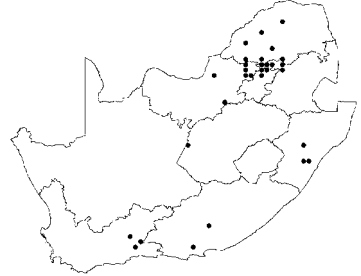


Harrisia martinii

moon cactus, harrisia cactus

CACTACEAE

Description: Spiny, succulent shrub 1–3 m high with long, clambering, ribbed stems resembling plaited rope; stems often arching downwards and rooting where they touch the ground; stem sections bright green, cylindrical, 2–4 cm wide, older stems strongly tuberclad (knobby protuberances); central spine 2–3 cm long; radials 1–3(–7), much shorter. **Flowers:** White, showy, 15–20 cm long, nocturnal, Nov–Jan.



Fruits: Bright pinkish red, shortly spiny, globose, succulent berries, ± 3 cm across, white inside with small, black seeds. **Cultivated for:** Ornament. **Invades:** Savanna, karoo, pastoral land. **Origin:** Argentina, Paraguay.

Harrisia pomanensis

midnight lady, devil's-rope cactus

CACTACEAE

Description: Very spiny, succulent shrub to 3 m high with long, clambering stems with 4–5(–7) ribs, often arching and even prostrate; stem sections bluish green, cylindrical, 2–4 cm wide, not tuberclad (lacking knobby protuberances); central spine 1–2.5 cm long; radials 6–8, ± 1 cm long. **Flowers:** White, showy, to 15 cm long, nocturnal. **Fruits:** Red, globose, non spiny, succulent berries, 3–5 cm long. **Cultivated for:** Ornament. **Invades:** Dry savanna, pastoral land.



Origin: Argentina, Paraguay, Bolivia.
NB: Compare with *H. tortuosa* (page 152) and *H. bondplandii* (page 118).



Cliff Moran



Helmut Zimmermann



Harrisia tortuosa

spiny snake cactus

CACTACEAE

Description: Very spiny, succulent shrub up to 3 m high with long, clambering stems with 6–7 ribs, often arching and even prostrate; stem sections bright green when young, becoming duller, cylindrical, 2–4 cm wide, somewhat tuberclad (with knobby protuberances) and grooves between slightly zig-zag; central spine 3–4 cm long; radials 5–10, 1–2 cm long. **Flowers:** White, showy, 12–15 cm long, nocturnal. **Fruits:** Red, globose, shortly spiny, succulent berries, 3–4 cm long. **Cultivated for:** Ornament. **Invades:** Savanna, karoo, pastoral land. **Origin:** Argentina, Paraguay, Uruguay. **NB:** Compare with *H. pomanensis* (page 150) and *H. bonplandii* (page 118).



Myrtillocactus geometrizans

bilberry cactus

CACTACEAE

Description: Spiny, succulent shrub or tree up to 5 m high; trunk short; branches columnar, numerous, upcurving, 6–10 cm wide, blue-green; ribs 5–6, smooth, low, rounded; central spine 1–7 cm long, stout, dagger-like; radial spines 5–9, 2–10 mm long. **Flowers:** Creamy white, very small (\pm 2 cm across), up to 9 per areole, diurnal. **Fruits:** Dark red or purple, globose, spineless, succulent berries, 1–2 cm across. **Cultivated for:** Ornament. **Invades:** Savanna, karoo. **Origin:** Mexico, Guatemala.



Nollie Bosman

NB: Differs from *Euphorbia ingens* by lacking milky latex and having spines in clusters from a central areole. Differs from *Cereus* by having less prominent and usually fewer ribs.



Hildegard Klein



Helmut Zimmermann



Peter Shisani



Trees & Shrubs Succulent: 1–10 m high or more

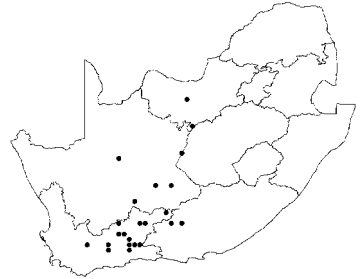


Opuntia elata

orange tuna

CACTACEAE

Description: Spiny, succulent, branched shrub 1–1.5 m high; stem sections flattened (cladodes) thick, green with purple blotches, longer than broad, up to 25 x 15 cm; spines in groups of 0–3, unequal, up to 6 cm long, glochids ~ absent. **Flowers:** Orange-yellow, ± 5 cm across, Sep–Nov. **Fruits:** Reddish, succulent berries, ± 6 cm long, spineless. **Cultivated for:** Ornament.



Invades: Roadsides, disturbed sites around habitation, karoo.

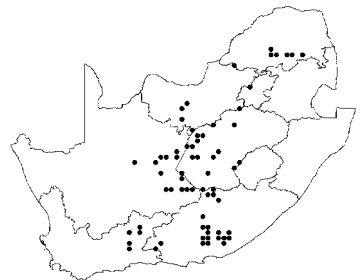
Origin: Argentina, Brazil, Paraguay, Uruguay.

Opuntia engelmannii (= *O. lindheimeri*)

small round-leaved prickly pear

CACTACEAE

Description: Spiny, succulent, branched shrub 0.5–1.5 m high; stem sections flattened (cladodes) green to grey-green, ~ rounded in outline but broader at apex than base, about 20 x 16 cm; spines in groups of 1–3(–6), up to 5 cm long, straight to slightly curved, usually confined to upper half of cladode; glochids rusty brown, usually prominent on young cladodes and crests of cladodes, encircling areole, to 1 cm long. **Flowers:** Yellow, Oct–Dec. **Fruits:** Red to purple, succulent berries, almost spineless, ± 7 cm long.



Cultivated for: Ornament.

Invades: Karoo, savanna, pastures.

Origin: S USA, Mexico. **Irritant:** Skin (glochids). **NB:** This is a very variable species. Biological control is negligible to substantial depending on variety.



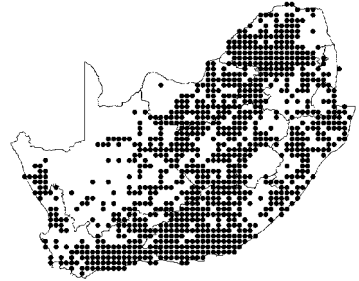


Opuntia ficus-indica

sweet prickly pear

CACTACEAE

Description: Succulent, branched shrub or tree to 5 m high, forming a sturdy trunk with age; stem sections flattened (cladodes), green to grey-green, much longer (30–60 cm) than broad (6–15 cm), heavily spined to spineless. **Flowers:** Orange or more rarely yellow, showy, Oct–Dec. **Fruits:** Yellowish turning reddish, succulent berries, ± 8 cm long, covered with clusters of minute spines. **Cultivated for:** Edible fruits, animal fodder, security hedging. **Invades:** Mainly dry and rocky sites in savanna and karoo. **Origin:** Mexico. **Irritant:** Skin (glochids). **NB:** Spineless cultivars are not listed in NEM:BA but can revert to the spiny form.



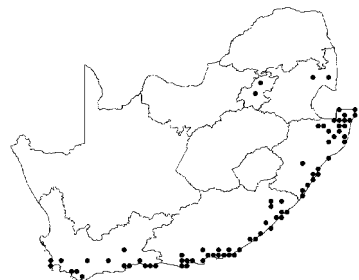
Following successful biological control, sweet prickly pear no longer poses a threat to agriculture or the environment despite some pockets of infestations in the E Cape and Limpopo.

Opuntia monacantha (*O. vulgaris* misapplied)

cochineal prickly pear

CACTACEAE

Description: Succulent shrub or tree to 5 m high, often with a definite trunk and drooping upper segments; stem sections flattened (cladodes), usually thin, appearing wilted, bright green and shiny at least when young, longer than broad (to 30 x 10 cm); spines 1–2(–3) per group (–12 on trunks). **Leaves:** Minute, early deciduous. **Flowers:** Yellow, outer petals with red markings, 7–9 cm long, Oct–Apr. **Fruits:** Reddish purple, obovoid, ± 6 cm long, long persistent, sometimes proliferous. **Cultivated for:** Edible fruits, fodder, hedging, cochineal dye. **Invades:** Coastal bush, moist savanna.



Origin: Brazil to N Argentina. **Irritant:** Skin (glochids). **NB:** Following successful biological control, cochineal prickly pear is considered a minor weed despite the occasional flare-ups of populations along the eastern coast.



Hildegard Klein



Trees & Shrubs Succulent: 1–10 m high or more

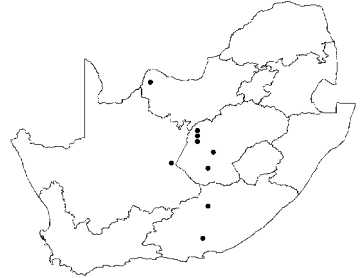


Opuntia robusta

spiny blue-leaf cactus

CACTACEAE

Description: Succulent, branched shrub, or almost tree-like with a distinct trunk with age, to 4 m high; stem sections flattened (cladodes), blue-green, robust, thick, ~ rounded, 20–40 cm across; areoles widely scattered; spines up to 5 cm long, 1–12 per group. **Leaves:** Minute, early deciduous. **Flowers:** Pale yellow, 5–7 x 5 cm, Oct–Dec. **Fruits:** Pink to purple or deep red, succulent berries, ~ globose, 6–8 cm long, deeply depressed at apex, sour tasting. **Cultivated for:** Animal fodder, ornament. **Invades:** Roadsides, railsides, dry sites in savanna, grassland and karoo. **Origin:** Mexico. **Irritant:** Skin (glochids). **NB:** Spineless cultivars are not listed in NEM:BA but can revert to the spiny form.



Spiny *Opuntia robusta*



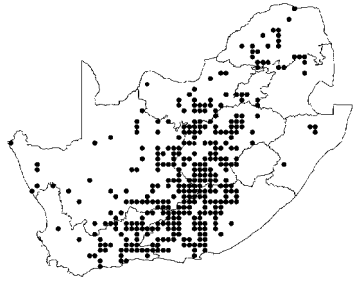
Opuntia spinulifera

large round-leaved prickly pear

CACTACEAE

Description: Spiny, much-branched succulent shrub up to 3 m high; stem sections flattened (cladodes) slightly glaucous-green, almost round, 20–40 cm across; areoles sunken, close-set; spines mostly deflexed downwards, in groups of 3–6, of varying lengths up to 2 cm long, in a regular subspiral arrangement. **Leaves:** Minute, early deciduous. **Flowers:** Yellow, with a cup-shaped calyx tube 2.5 cm long, densely covered by areoles containing bristles around the mouth, Nov–Dec. **Fruits:** Yellow, small berries \pm 2.5 cm long. **Cultivated for:** Ornament, hedging. **Invades:** Savanna, grassland. **Origin:** Mexico. **Irritant:** Skin (glochids).





Spineless *Opuntia robusta* cultivars are widely cultivated and naturalised but are not listed in NEM:BA



Trees & Shrubs Succulent: 1–10 m high or more



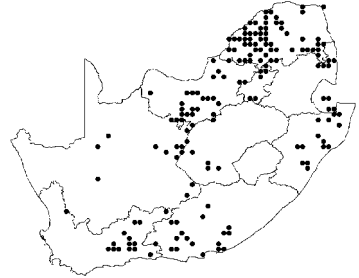
Opuntia stricta

pest pear of Australia

CACTACEAE

Description: Spreading, much-branched, succulent shrub 0.5–2 m high; stem sections flattened (cladodes) green to bluish-green, longer than broad (to 23 x 10 cm); spines yellow, to 4 cm long; usually 1 spine per areole or absent in var. *stricta*; 4–7 coarser spines in var. *dillenii*.

Leaves: Minute, deciduous. **Flowers:** Yellow (A), showy, large, to 7 cm long, Nov–Jan. **Fruits:** Red turning purple, succulent berries (B), ± 5 cm long, outer surface smooth with clusters of small glochids, typically narrowed at the base, sour tasting. **Cultivated for:** Ornament. **Invades:** Savanna, dry grassland. **Origin:** SE USA, Mexico, W Indies. **Irritant:** Skin (glochids).



var. *stricta*

Opuntia tomentosa

velvet opuntia, velvet tree-pear

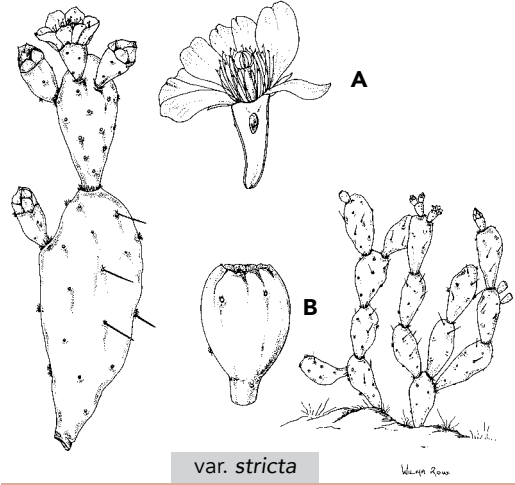
CACTACEAE

Description: Succulent, branched shrub or tree 2–6(–8) m high, forming a sturdy trunk with age; stem sections flattened (cladodes), dull green, with a velvety surface, 15–35 x 6–16 cm; spines absent or in groups of 1–2, 3–25 mm long, usually on young plants and absent from older cladodes. **Leaves:** Minute, early deciduous.

Flowers: Bright orange with reddish markings on undersides of outer petals, ± 5 cm across. **Fruits:** Dull red or purplish red, succulent berries, 3–5 cm long, shortly hairy and with tufts of glochids, pulp reddish.

Cultivated for: Ornament. **Invades:** Savanna. **Origin:** Mexico and Guatemala. **Irritant:** Skin (glochids).





var. *stricta*



Trees & Shrubs Succulent: 1–10 m high or more



Peniocereus serpentinus (= *Nyctocereus serpentinus*)

serpent cactus, snake cactus

CACTACEAE

Description: Spiny, multistemmed, succulent shrub 2–3 m high with tuberous roots; stems green, erect, columnar, sometimes arching or creeping, 3–5 cm wide, with 10–12(–17) ribs; spines numerous, in groups of 10–14, white to brown, often tinged red or purplish when young; radial spines needle- or bristle-like, up to 1.5 cm long; central spine absent or single, stouter, up to 3 cm long. **Flowers:** White, tinged red outside, showy, not restricted to top 10 cm of stem (like torch cactus), to 25 cm long, nocturnal, floral tube covered with white hairs and bristles, Oct–Mar.



Peter Shisani

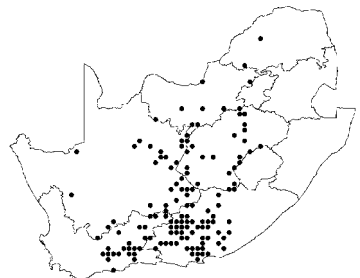
Fruits: Red, with deciduous spines, 4–6 cm long (**A**). **Cultivated for:** Hedging, ornament. **Invades:** Savanna, karoo. **Origin:** Mexico.

Trichocereus spachianus (= *Echinopsis spachiana*)

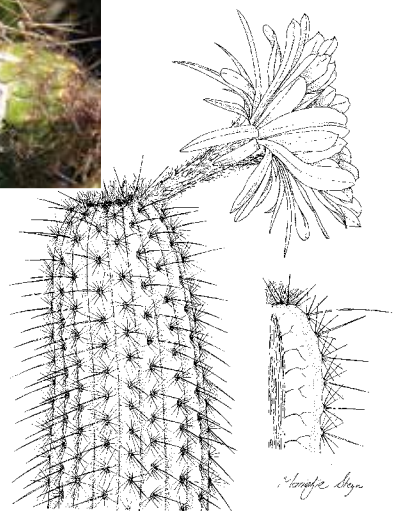
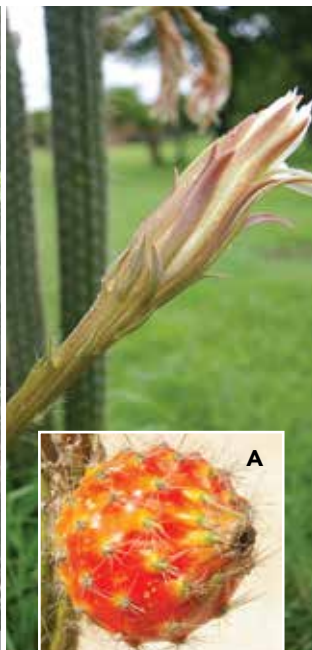
torch cactus

CACTACEAE

Description: Spiny, multistemmed, succulent shrub 1–2 m high, stems green, erect, columnar, 8–10 cm wide, with 10–15 ribs; spines numerous, in groups of 8–10, amber-coloured turning grey, central spine longer than radials. **Flowers:** White, large, conical, to 20 x 15 cm, subapical, nocturnal, floral tube covered with long, blackish hairs, Nov–Mar. **Fruits:** Green, black-hairy, ± 50 cm long, white inside with small, black seeds (**A**). **Cultivated for:** Hedging, ornament. **Invades:** Dry savanna, karoo. **Origin:** Argentina.



NB: Torch cactus has been known in South Africa under various scientific names—*Trichocereus spachianus*, *Echinopsis spachiana* and *E. schickendantzii*. The most likely correct name according to current taxonomic opinion is *Trichocereus spachianus* (fide Roberto Kiesling, Argentina).



Trees & Shrubs Succulent: 1–10 m high or more



Cylindropuntia leptocaulis

pencil cactus

CACTACEAE

Description: Spiny, sparingly to densely branched, succulent shrub 0.5–1.8 m high; stem sections grey-green to purplish, very slender, 3–5 mm across, and 2–8 cm long; spines sheathed, hard, 0–1(–3) per areole, 1–4.5 cm long, yellowish or reddish brown; glochids yellowish or reddish brown.

Flowers: Pale yellow to greenish yellow, sometimes red-tipped, 5–8 mm long.

Fruits: Yellow to red, succulent berries, \pm 1 cm long. **Cultivated for:** Ornament.

Invades: Dry savanna and karoo (EC, NC). **Origin:** S USA, Mexico. **Irritant:** Skin (glochids).



Lukas Otto

Cylindropuntia spinosior

cane cholla, spiny cholla

CACTACEAE

Description: Spiny, compact shrub, tree-like, 0.4–2 m high; branches whorled; stem sections green to purplish, up to 23 x 3.5 cm; tubercles of stems crowded, prominent, 5–15 mm high; spines 4–24 per areole, interlaced, up to 1.5 cm long, tan to pinkish or reddish brown; sheaths whitish. **Flowers:** Pink to reddish purple, white, yellow, salmon-coloured. **Fruits:** Yellow to ~ orange when ripe, succulent berries, 2–5 cm long, strongly tubercled, spineless, rarely forming chains of fruits.

Cultivated for: Ornament. **Invades:** Dry savanna, karoo (NC, WC). **Origin:** SW USA, Mexico. **Irritant:** Skin (glochids).



Opuntia leucotricha

Aaron's-beard prickly pear

CACTACEAE

Description: Spiny, succulent shrub 3–4 m high; stem sections flattened (cladodes) with a velvety surface, up to 25 x 12 cm; spines 1–6 per group; radiate spines yellow, 1–2 cm long; central spine white, flexible, deflexed, up to 7.5 cm giving older cladodes a white, bearded appearance. **Flowers:** Yellow, \pm 5 cm across. **Fruits:** Yellowish green, 4–6 cm long, spineless or with wispy, thread-like spines. **Cultivated for:** Ornament. **Invades:** Savanna (G, FS, NW, KZN, EC, NC). **Origin:** Mexico. **Irritant:** Skin (glochids).

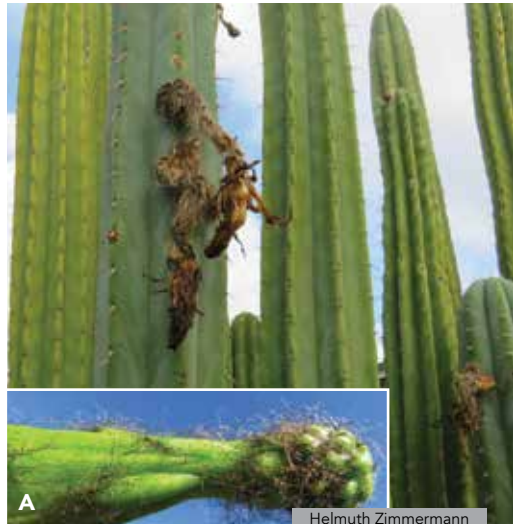


Trichocereus pachanoi (= *Echinopsis pachanoi*)

San Pedro cactus

CACTACEAE

Description: Spiny or spineless tree 3–6 m high, branched from the base; stems light to dark green, sometimes bluish green, usually with 6–8 ribs; spines few, 3–7, often spineless, dark yellow to brown, up to 2 cm long. **Flowers:** White, large, 19–24 x 20 cm, born largely towards branch tips, night-blooming; axis of scales on floral tube bear long black hairs (A). **Fruits:** Dark green, succulent berries, up to 6 x 3 cm; axils of scales bear long black hairs. **Cultivated for:** Hedging, ornament, hallucinogenic drug (mescaline). **Invades:** Savanna, rocky hillsides (EC). **Origin:** Ecuador, Peru. **NB:** Compare with the very similar *Cereus* species.



Trees & Shrubs Woody: almost leafless

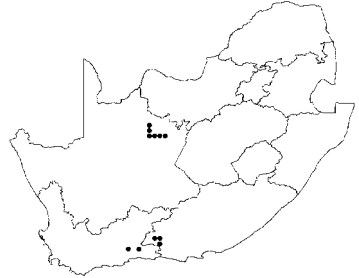


Alhagi maurorum

camel thorn bush

FABACEAE

Description: Much-branched, thorny, almost leafless shrub up to 1.5 m high; aerial stems annual, green turning yellowish, striate, hairless, upper branches ending in hard, sharp spines; underground stems extensive. **Leaves:** Dark green, simple, up to 2 cm long, sparse. **Flowers:** Purple, solitary, borne on the spine-tipped branches, Dec–Jan. **Fruits:** Brown pods, 1- to 2-seeded. **Invades:** Dry savanna, karoo, ploughed lands, riverbanks; prefers deep soils. **Origin:** E Europe, Asia.



Cytisus scoparius (= *Genista scoparia*)

Scotch broom

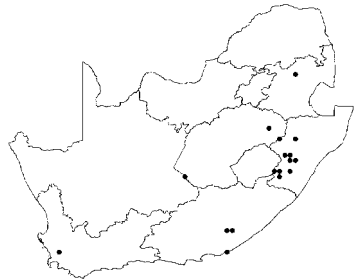
FABACEAE

Description: Unarmed shrub to 4 m high, with many, slender, erect, prominently ridged or grooved, green branches, becoming almost leafless and rush-like.

Leaves: Dark green, 8–15 mm long, 3-foliolate, but upper leaves often reduced to 1 leaflet, deciduous.

Flowers: Bright yellow, 2.5 cm long, mostly solitary or paired, axillary, Sep–Mar. **Fruits:** Brownish black pods, 3.5–5 cm long, hairless except for silky hairs at the margin. **Cultivated for:** Ornament, shelter. **Invades:** Grassland, forest margins, roadsides. **Origin:** Europe.

Poisonous. Whole plant especially seeds; toxic to horses, cattle and sheep.



Spartium junceum

Spanish broom

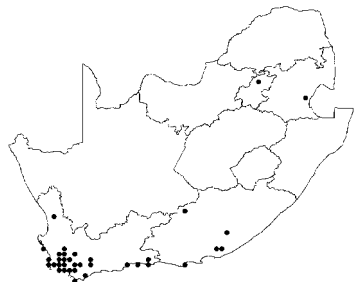
FABACEAE

Description: Unarmed shrub 1.5–2.5(–4) m high, with long, slender, ascending, cylindrical, green branches, rush-like and almost leafless.

Leaves: Blue-green, silky beneath, simple (undivided), deciduous. **Flowers:**

Yellow, fragrant, 2.5 cm long, in terminal racemes 30–40 cm long, Aug–Nov. **Fruits:** Brown pods, flattened, to 7.5 cm long, initially entirely covered with white, silky hairs. **Cultivated for:** Ornament, hedging.

Invades: Fynbos, roadsides, urban open space, riverbanks, wasteland. **Origin:** S Europe, N Africa, W Asia. **Poisonous:** Whole plant especially seeds; toxic to horses and livestock.





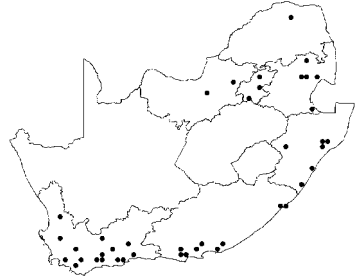


Casuarina cunninghamiana

beefwood, river she-oak

CASUARINACEAE

Description: Evergreen tree to 38 m high with gracefully arching, slender, jointed branchlets and greyish green, pyramidal crown becoming cylindrical; branchlets and cones sparsely hairy. **Leaves:** Minute scales, in whorls of 8–10; scales with a transverse brown band, internodes with rounded ribbing. **Flowers:** Male and female flowers on different plants; male flowers in yellowish spikes to 2 cm long; female flowers in small, reddish, globose heads (conelets), Sep–Apr.



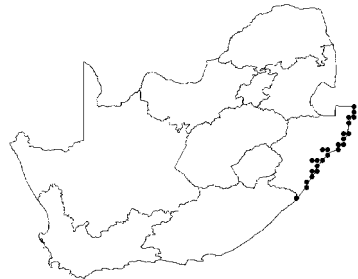
Fruits: Brown, ~ woody conelets, up to 14 x 6 mm, seeds flattened, winged. **Cultivated for:** Ornament, shelter. **Invades:** Watercourses. **Origin:** N and E Australia.

Casuarina equisetifolia

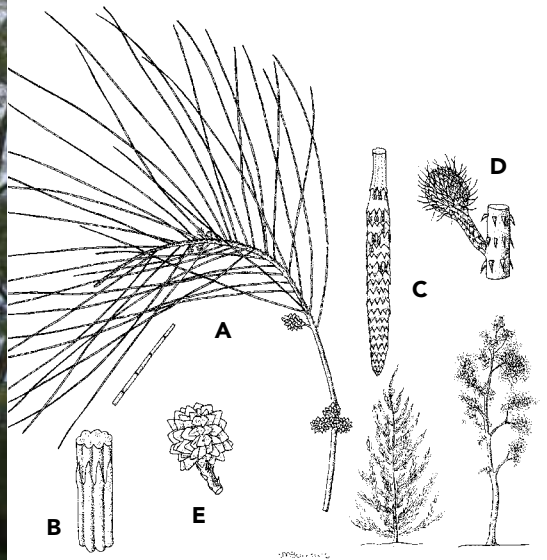
horsetail tree, beach she-oak

CASUARINACEAE

Description: Evergreen tree to 24 m high with gracefully arching, slender, jointed branchlets (A) and greyish green, pyramidal crown becoming cylindrical; branchlets and cones ~ densely hairy. **Leaves:** Minute scales, in whorls of 6–8; scales uniformly pale, internodes sharply ribbed (B). **Flowers:** Male and female flowers on same plant; male flowers in yellowish spikes (C) to 3 cm long; female flowers in small, reddish, hairy, globose heads (conelets) (D), Sep–Apr.



Fruits: Brown, ~ woody conelets, to 17 x 16 mm. **Cultivated for:** Dune stabilization, shelter. **Invades:** Coastal dunes, sandy sea-shores. **Origin:** Australasia and Pacific Isles.



Trees & Shrubs Woody: leaves scale- or needle-like



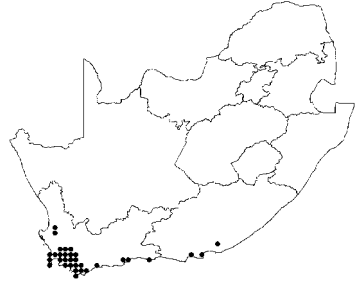
Hakea drupacea (= *H. suaveolens*)

sweet hakea

PROTEACEAE

Description: Much-branched, rounded shrub or tree to 6 m high; young growth sparsely hairy, otherwise hairless.

Leaves: Dark green to grey-green, hairless, to 10 cm long, divided into upright, sharp-pointed needles 3–5 cm long. **Flowers:** Cream, fragrant, in axillary clusters to 2 cm long, Jun–Sep. **Fruits:** Woody follicles, ± 2.5 x 2 cm, with two apical horns; surface smooth, shiny, yellowish brown with dark warts, ageing to grey; in clusters of 3–6 or more; splitting into 2 equal valves; seed winged. **Cultivated for:** Shelter, dune reclamation. **Invades:** Mountain and lowland fynbos. **Origin:** SW Australia.

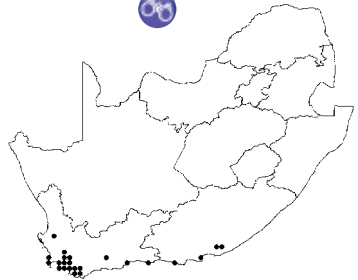


Hakea gibbosa

rock hakea

PROTEACEAE

Description: Much-branched, prickly and hairy shrub or tree to 4 m high; young twigs and branches markedly hairy. **Leaves:** Greyish green, at first densely hairy becoming ~ hairless, needle-shaped, up to 8 cm long, sharp-pointed. **Flowers:** Deep cream, small, in leaf axils, Jun–Sep. **Fruits:** Grey, woody follicles, ± 3.5 x 3 cm, with 2 sharp apical horns, surface rough and thick; 1 or 2 together, splitting into 2 equal valves, each containing 1 winged seed. **Cultivated for:** Hedging; provides firewood. **Invades:** Mountain fynbos. **Origin:** SE Australia.

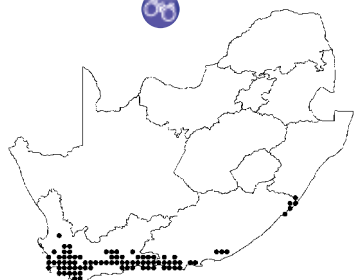


Hakea sericea

silky hakea

PROTEACEAE

Description: Much-branched, very prickly shrub or tree to 5 m high; young twigs covered in short, fine hairs; older stems hairless. **Leaves:** Dark green to grey-green, hairless, needle-shaped, up to 4 cm long, sharp-pointed. **Flowers:** Cream, small, in leaf axils, Jun–Sep. **Fruits:** Woody follicles, ± 3 x 2.5 cm, with 2 apical horns, purplish brown with paler markings, turning grey, surface thick and wrinkled; splitting into 2 equal valves, each containing 1 winged seed. **Cultivated for:** Hedging, dune reclamation, ornament. **Invades:** Mountain fynbos. **Origin:** SE Australia.





Trees & Shrubs Woody: leaves scale- or needle-like

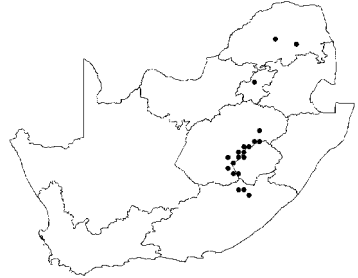


Juniperus virginiana

red cedar

CUPRESSACEAE

Description: Coniferous tree to 18 m high; crown greyish green, initially conical, later with horizontal, spreading branches; bark grey to reddish brown, peeling in long strips. **Leaves:** Adult leaves scale-like, overlapping, acute, 1.5 mm long; juvenile leaves needle-like to 10 mm long, in opposite pairs. **Cones:** Male and female cones on separate trees; female cones berry-like, dark blue with bluish grey bloom, to 6 mm across. **Cultivated for:** Shelter, shade, ornament. **Invades:** Grassland, riverbanks, rocky outcrops. **Origin:** NE America. **Irritant:** Skin (leaves). **Poisonous:** Leaves toxic to livestock.

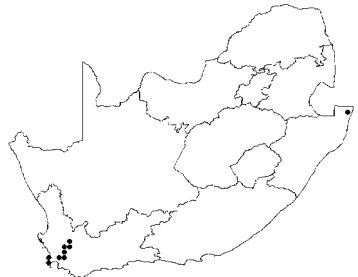


Pinus canariensis

Canary pine

PINACEAE

Description: Tree up to 20 m high; narrowly conical when young, more or less oval when older with a flat peak; branches horizontal, branchlets yellow, secondary shoots often on lower trunk. **Leaves:** Needles, blue-green when young, turning bright green, in bundles of 3; 15–30 cm long, slender, giving branchlets a slightly drooping effect. **Cones:** Light brown, woody, cylindric-ovoid, large, 15–22 cm long (A); cone scales sharply cross keeled (B). **Cultivated for:** Timber. **Invades:** Fynbos, usually on drier mountain slopes. **Origin:** Canary Isles.

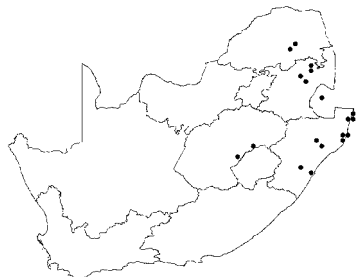


Pinus elliottii

slash pine

PINACEAE

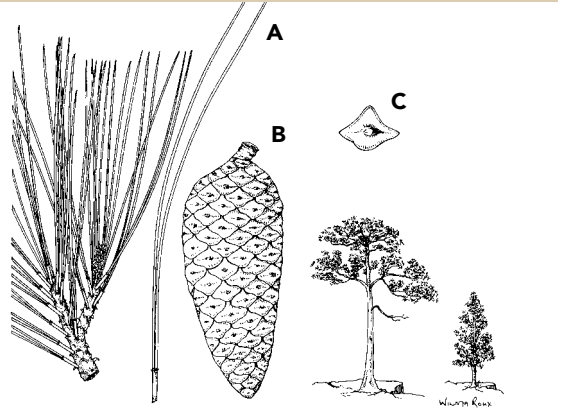
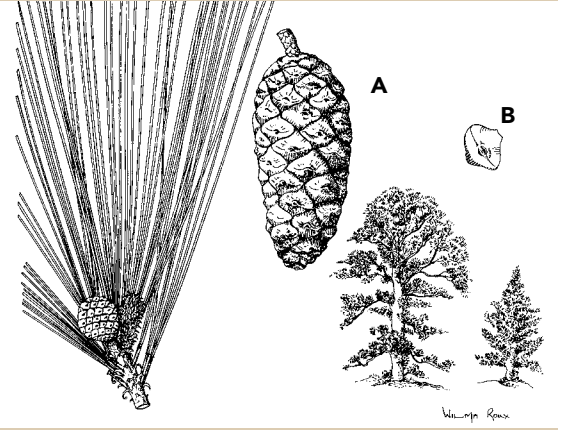
Description: Tree up to 30 m high with a dark green, open crown of modest spread, free of branches to a considerable height. **Leaves:** Needles, dark green, glossy, in bundles of 2 or 3 (A); 20–30 cm long, coarse and stiff, crowded at ends of branchlets. **Cones:** Yellowish brown (B), woody, narrowly ovoid to broadly ovoid when open, 6–14 cm long; cone scales (C) end in a blunt, grey prickle 1–2 mm long (as opposed to *P. taeda* with a sharp, recurved thorn, 6–7 mm long). **Cultivated for:** Timber. **Invades:** Forest edges and grassland. **Origin:** SE USA. **NB:** NEM:BA category 1b for non-sterile plants.





Ivan Boyd

Coppice from secondary trunk shoots



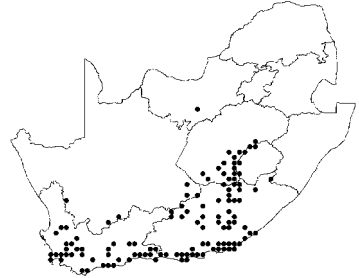


Pinus halepensis

Aleppo pine

PINACEAE

Description: Tree 5–15(–20) m high; conical with a short trunk when young, rounded to oblong with a crooked trunk when older; crown open and “see through”; branches numerous and slender; bark silvery grey becoming darker. **Leaves:** Needles, grey-green to yellow-green, in bundles of 2 (**A**), short, 4–8 cm long, slender and stiff. **Cones:** Reddish brown, glossy, woody, conic-ovoid, 8–10 cm long; clustered on stout, reflexed stalks; cone scales (**B**) flat or slightly raised along a transverse ridge. **Cultivated for:** Shelter, poles, firewood. **Invades:** Grassland, fynbos, particularly on dry soils. **Origin:** Mediterranean.

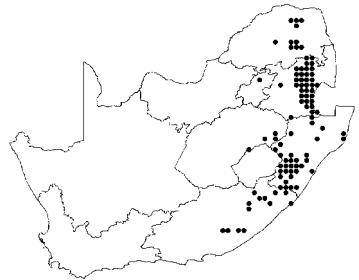


Pinus patula

patula pine

PINACEAE

Description: Tree with drooping foliage, 12–20(–40) m high; conical when young, developing a dense, rounded canopy at maturity; often forking low down with long, spreading branches. **Leaves:** Needles, bright green, in bundles of 3, 12–30 cm long, slender and drooping. **Cones:** Pale brown, woody, conic-ovoid, in clusters of 2–5, 7–10 cm long, strongly reflexed on very short stalks; cone scales (**A**) with sunken centres and minute, deciduous prickles. **Cultivated for:** Timber. **Invades:** Moist grassland, forest margins and gaps, road cuttings. **Origin:** Mexico to Nicaragua.

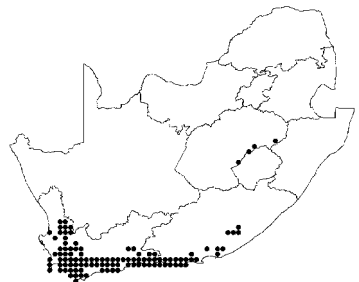


Pinus pinaster

cluster pine

PINACEAE

Description: Tree 8–15(–30) m high; conical when young, becoming cylindrical with a tall, bare trunk when older; bark reddish brown, deeply cracked into plates. **Leaves:** Needles, dull grey-green, in bundles of 2, 8–24 cm long, thick and rigid; winter buds very large on terminal shoots, with reddish brown scales, fringed with whitish silky hairs. **Cones:** Initially purple (**A**), turning light brown, woody, conic-ovoid, 9–18 cm long, shortly stalked, often clustered and persistent; cone scales (**B**) have a distinct ridge with a short, hard, curved point. **Cultivated for:** Timber. **Invades:** Mountain and lowland fynbos, grassland. **Origin:** Mediterranean.



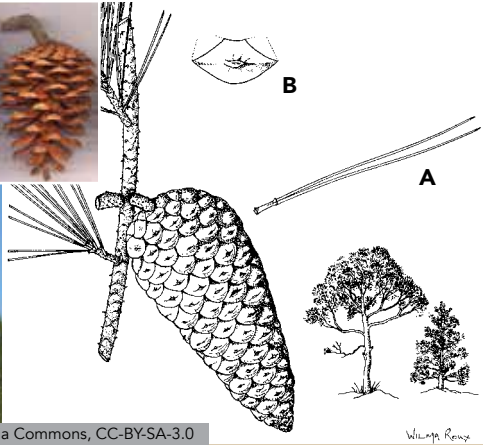
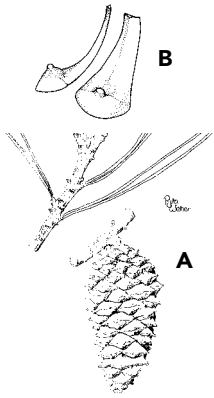


Photo of cones: Wikimedia Commons, CC-BY-SA-3.0

Wilupa Rave



Wilupa Rave



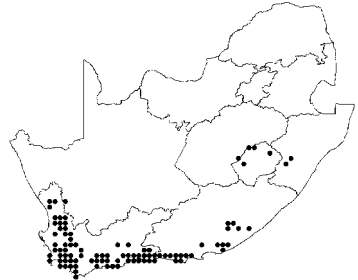


Pinus radiata

radiata pine, Monterey pine

PINACEAE

Description: Tree 12–25(–30) m high with a sharply conical canopy in plantations, but a broad, rounded canopy when open-grown. **Leaves:** Needles, dark green, in bundles of 2 or usually 3, very densely arranged, 6–15 cm long, slender. **Cones:** Yellowish brown, woody, obliquely ovoid, large, 7–14 cm long, strongly asymmetrical and reflexed, persistent (**A**: immature cone); cone scales (**B**) on outer side very large and thick, ending in a fine thorn; inner scales small and flat. **Cultivated for:** Timber, shelter. **Invades:** Fynbos, forest gaps, grassland, usually on moist, mountain slopes. **Origin:** SW USA, Mexico.

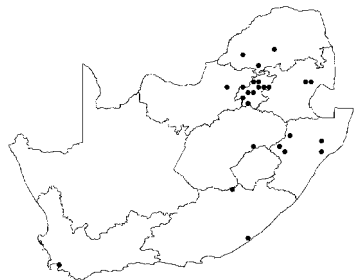


Pinus roxburghii

chir pine, longifolia pine

PINACEAE

Description: Tree up to 20 m high or more with a conical to oval crown; retaining foliage almost to the ground when open-grown; similar to *P. canariensis* but branches larger, distinctly ascending, and secondary shoots absent from trunk; bark very thick and fissured. **Leaves:** Needles, light green, in bundles of 3, 20–30 cm long, slender. **Cones:** Light brown, woody, cylindrical-ovoid, large, 15–20 cm long; cone scales elongated and reflexed. **Cultivated for:** Timber, shelter, ornament. **Invades:** Grassland and savanna. **Origin:** Himalayas.

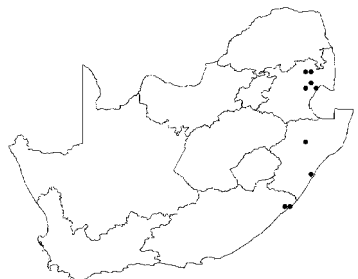


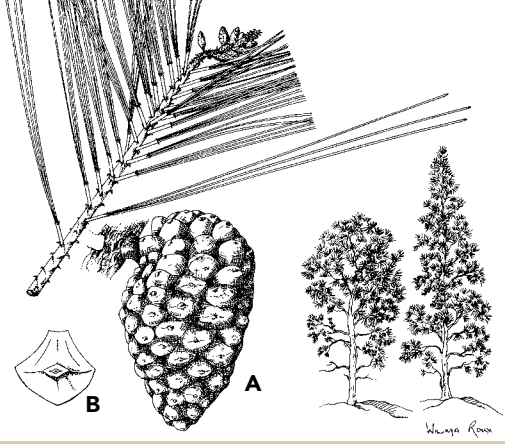
Pinus taeda

loblolly pine

PINACEAE

Description: Tree up to 30 m high with a dark green, dense crown; retaining its lower branches when adequately lit from the side. **Leaves:** Needles, dark green, in bundles of 3 and characteristically twisted, 10–20 cm long. **Cones:** Pale brown, woody, ovoid to oblong, 8–12 cm long; cone scales end in a sharp, recurved thorn 6–7 mm long (as opposed to *P. elliottii* with a blunt, grey prickle 1–2 mm long). **Cultivated for:** Timber. **Invades:** Forest margins and grassland. **Origin:** SE USA.





John Hoffmann





Tamarix aphylla

Athel tree, desert tamarisk

TAMARICACEAE

Description: Evergreen or deciduous tree or large shrub to 10 m high, bark reddish brown becoming grey; branchlets appearing jointed like those of *Casuarina*. **Leaves:** Greyish, sheathing the stem (fully surrounding the branchlets) to a length of ± 2 mm, with a very short, sharp point. **Flowers:** Pale pink to whitish, 5-merous, virtually stalkless, petals falling early but some persistent, in dense racemes 3–6 cm long, summer– autumn (terminal twigs not congested as in indigenous *T. usneoides*). **Fruits:** Capsules, to 3 mm long. **Cultivated for:** Ornament, shade, shelter. **Potentially invasive:** Riverbanks, riverbeds. **Origin:** N Africa, Asia.



Tamarix chinensis

Chinese tamarisk

TAMARICACEAE

Description: Evergreen or deciduous shrub or small tree to 5 m, bark black or dark brown. **Leaves:** Glaucous or pale green, not sheathing the stem, narrowly oblong and narrowed at the base, abruptly pointed, 1.5–3 mm long. **Flowers:** Pink, 5-merous, petals persistent, elliptic to ovate, margins of sepals and bracts not toothed (entire), in dense racemes 2–6 cm long, 5–7 mm wide, spring– autumn. **Fruits:** Capsules. **Cultivated for:** Ornament, shade, shelter, erosion control; honey source. **Invades:** Riverbanks, riverbeds. **Origin:** Mongolia, China.



Tamarix gallica

French tamarisk

TAMARICACEAE

Description: Evergreen or deciduous, large shrub or tree to 8 m high, bark deep purple or blackish brown. **Leaves:** Glaucous, not sheathing the stem, narrowly oblong and narrowed at the base, slender-pointed, 1.5–2 mm long. **Flowers:** Pink or white, 5-merous, petals soon falling, petals elliptic, sepals not toothed (entire), in slender racemes 1–3 cm long, 3–5 mm wide, spring–autumn. **Fruits:** Capsules. **Cultivated for:** Ornament. **Potentially invasive:** Riverbanks, riverbeds. **Origin:** Europe.



Indigenous *Tamarix usneoides* has overlapping, pale grey-green leaves; whitish flowers and short, congested terminal twigs.



Tamarix usneoides

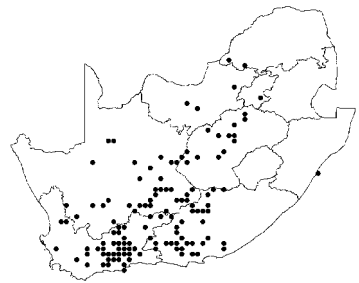
Tamarix ramosissima

pink tamarisk

TAMARICACEAE

Description: Evergreen or deciduous shrub or small tree to 5 m high, bark reddish brown. **Leaves:** Glaucous or pale green, not sheathing the stem, triangular, narrowed at the base, narrowly pointed, 1.5–3.5 mm long. **Flowers:** Pink, 5-merous, petals persistent, elliptic to obovate, margins of sepals and bracts finely toothed, in dense racemes 1.5–7 cm long, 4–5 mm wide, spring–autumn. **Fruits:** Capsules. **Cultivated for:** Ornament, shade, shelter, erosion control; honey source. **Invades:** Riverbanks, riverbeds. **Origin:** E Europe to C and E Asia.

NB: Most invasive plants are hybrids. Identification requires detailed study of floral features under magnification.



Combined distribution of invasive *Tamarix* species and hybrids.





Banksia ericifolia

heath banksia

PROTEACEAE

Description: Tall shrub or small tree up to 6 m high; single stemmed from the base; bark corky, grey brown; branchlets smooth with lenticels. **Leaves:** Dark green, crowded, linear, 1–2 cm x 1 mm. **Flowers:** Orange or red, in spikes 10–20 cm long x 5 cm wide, Apr–Sep.

Fruits: Woody follicles arranged on a cylindrical “cone”, usually opening with fire to release winged seeds. **Cultivated for:** Ornament, shade, shelter. **Invades:** Fynbos, roadsides and disturbed sites (WC: Caledon, Kleinmond). **Origin:** SE Australia.



Grevillea rosmarinifolia

rosemary grevillea

PROTEACEAE

Description: Evergreen, rounded, well-branched shrub to 2 m high. **Leaves:** Dark green, leathery, needle-shaped with pointed tips, margins rolled under, silky-haired beneath, 1–4 cm long and 1–3 mm wide. **Flowers:** Red, occasionally pink or white; perianth hairless outside, bearded inside, ± 7 mm long; style 1.5–2 cm long, protruding; 1–8 flowers in short, dense, pendulous, axillary clusters, summer. **Fruits:** Follicles, ± 1 cm long, usually hairy. **Cultivated for:** Ornament. **Invades:** Fynbos; known from one site near Kleinmond, WC. **Origin:** SE Australia.



RG & FJ Richardson

Melaleuca parvistaminea

rough-barked honey myrtle

MYRTACEAE



Description: Shrub or small tree up to 4 m high with rough, corky bark. **Leaves:** Green, scattered or in whorls of 3, linear, 4–12 x 1 mm, with raised oil glands on lower surface. **Flowers:** White to cream, tinged pink, in dense spikes 1–2.5 cm long. **Fruits:** Woody capsules, about 3 x 3 mm, in clusters along the branches. **Cultivated for:** Ornament. **Invades:** Wetlands in fynbos (WC: Wolseley and Tulbagh). **Origin:** SE Australia.



Erita van Wyk

Ulex europaeus

European gorse

FABACEAE



Description: Much-branched, densely spiny shrub 0.5–1.5(–3) m high; branchlets striated, hairy when young; spines green, branched, deeply furrowed, rigid and sharp-pointed, 1.5–3.5 cm long. **Leaves:** Dark green, minute; 3-foliolate on young plants; spinous or scale-like on mature plants. **Flowers:** Bright yellow, crowded towards the ends of branchlets, fragrant, spring–all year. **Fruits:** Dark brown or black pods, hairy, 2–2.5 cm long. **Cultivated for:** Ornament, hedging; honey source. **Invades:** Grassland, vleis, valleys, and moist sites in mountain regions (L, KZN, EC). **Origin:** Europe. **Poisonous:** Seeds. **NB:** May be confused with some indigenous *Aspalathus* species.



Trees & Shrubs Woody: leafy, spiny-stemmed



Acacia paradoxa (= *A. armata*)
kangaroo thorn

FABACEAE

Description: Shrub up to 3.5 m high, branchlets often down-arched, angular, usually hairy; spines in pairs, slender, 4–12 mm long. **Leaves:** Phyllodes, dark green, erect, asymmetric, up to 15 x 6 mm, hairy or hairless, margin often wavy. **Flowers:** Golden-yellow, globular flowerheads to 12 mm across, arising singly from axillary stalks as long as the phyllodes, in dense terminal sprays, Aug–Oct. **Fruits:** Small brown pods, covered in white-woolly hairs, to 6 cm long, 3–5 mm wide. **Cultivated for:** Ornament, hedging. **Invades:** Mountain fynbos (Table Mountain). **Origin:** Temperate W, E and S Australia.

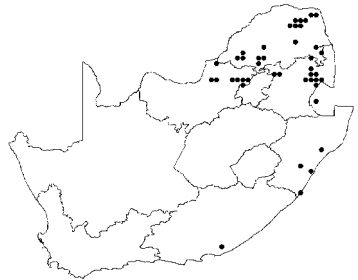


Duranta erecta

forget-me-not tree, pigeon berry

VERBENACEAE

Description: Shrub or small tree 2–4(–7) m high, sometimes scrambling, usually evergreen, sometimes with spines in the leaf axils, branches ~ 4-angled. **Leaves:** Dark green, entire or margins coarsely toothed above the middle, to 6 x 9 cm. **Flowers:** Lilac, light blue or white, fragrant, in recurved spikes up to 15 cm long, Nov–Dec(–Mar). **Fruits:** Orange-yellow, shiny, fleshy drupes, 5–10 mm wide, covered by the calyx which is closed with a curved beak; in pendent spikes. **Cultivated for:** Ornament, hedging. **Invades:** Savanna, forest edges, riverbanks, other moist sites, ravines. **Origin:** Tropical America. **Poisonous.**

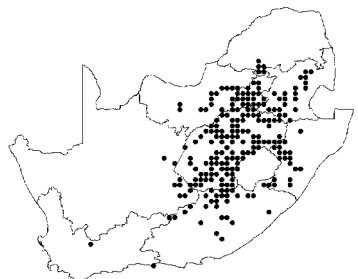


Gleditsia triacanthos

honey locust

FABACEAE

Description: Spreading tree 15–20 m high, deciduous with yellow autumn tints; trunk and branches armed with formidable, simple to 3-branched spines (A) 5–10 cm long (except var. *inermis*); suckers from the roots. **Leaves:** Bright green, pinnate or bipinnate, 12–20 cm long; leaflets minutely toothed. **Flowers:** Yellowish green, small, in long, narrow sprays 3–6 cm long, Oct–Nov. **Fruits:** Pods, dark reddish brown, shiny, twisted, flattened, up to 40 x 3 cm; seeds in a sweetish pulp. **Cultivated for:** Fodder, honey, shade, donga reclamation. **Invades:** Grassland, savanna, riverbanks, roadsides. **Origin:** E USA.

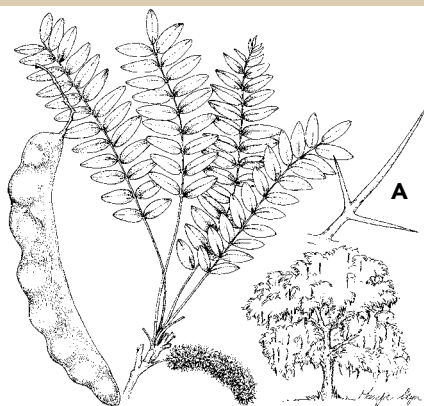




John Wilson



Geoff Nichols



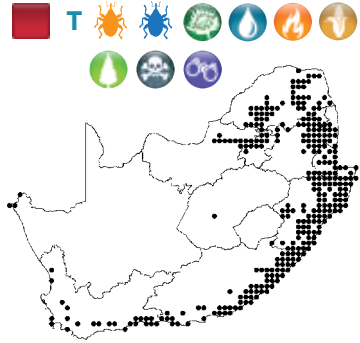


Lantana camara and other seed-producing Lantana species or hybrids non-indigenous to South Africa

VERBENACEAE

lantana

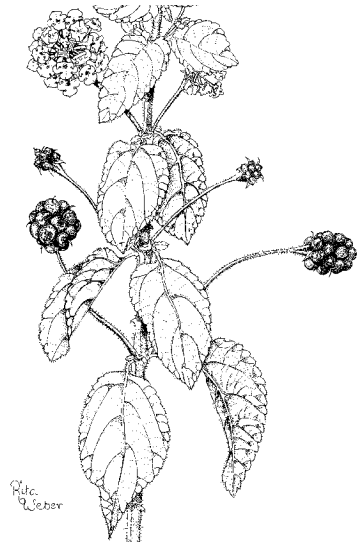
Description: Compact, floriferous, trailing or erect shrubs or untidy scramblers up to 2 m or higher; stems often 4-angled, usually covered with short, stiff hairs and recurved prickles, but sometimes unarmed. **Leaves:** Dark green, paler below, rough, hairy, becoming ~ hairless, smelling strongly when crushed. **Flowers:** Pink, red, crimson, orange, yellow or white in compact, flat-topped heads, often with several colours in one head, Sep–Apr (–all year). **Fruits:** Glossy green turning purplish-black, 1-seeded, fleshy drupes. **Cultivated for:** Ornament, hedging. **Invades:** Forest and plantation margins, savanna, riverbanks, roadsides, degraded land. **Origin:** C and S America. **Irritant:** Skin (leaves). **Poisonous:** Whole plant, especially unripe fruit; toxic to humans and other mammals; causes photosensitization in cattle and livestock deaths.



Lantana entities that are illegal: *Lantana camara* complex, Lantana Red, Lantana Yellow (bush and creeping varieties e.g. *Lantana "montevidensis"* cv. Sundancer), Lantana White (bush variety), *Lantana trifolia*. Permitted entities: sterile white ('white lightning') and purple creeping varieties of *Lantana montevidensis*. Biological control varies from negligible on the Highveld to substantial in the Lowveld and coastal regions.



Lantana camara complex



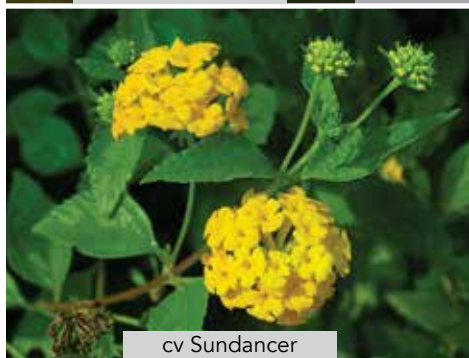


cv Lantana Red

Lukas Otto



Lantana camara complex



cv Sundancer



cv Lantana White



Lantana camara complex



Mimosa pigra

giant sensitive plant

FABACEAE

Description: Shrub or tree to 6 m high; stems and leaves hairy and thorny; stem thorns to 7 mm long. **Leaves:** Yellowish green, 4–8 cm long, with a straight thorn at junction of each of the 6–16 leaflet pairs; sometimes with thorns between the pairs; sensitive to touch. **Flowers:** Pink or mauve, in ~ globose heads, 1 or 2–3, in upper leaf axils, Oct–May(–all year). **Fruits:** Brown, densely bristly pods, 3–8 cm long, breaking transversely into 12–26 segments, each with a seed (A); pod sutures remain as an empty frame.



Stefan Nesper

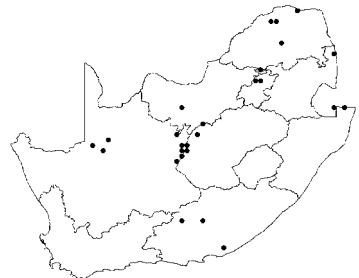
Cultivated for: Ornament. **Invades:** Floodplains, shallow dams, pans, riverbanks. **Origin:** Mexico to N Argentina.

Parkinsonia aculeata

Jerusalem thorn

FABACEAE

Description: Evergreen tree 6–9 m high; stem smooth, greenish yellow, eventually brownish, branches slender, zigzag, armed with stout spines 1 cm long. **Leaves:** Light green, with 1–2(–3) pairs of long, slender, pendulous, flattened primary leaflets (pinnae) 20–40 cm long, arising from a short, spiny rachis; secondary leaflets numerous, widely spaced, < 1 cm long, deciduous. **Flowers:** Yellow, fragrant, ± 1 cm long, in pendulous sprays from leaf axils, Oct–Nov. **Fruits:** Brown, flattened pods (A) 5–10 cm long, constricted between the seeds.



Cultivated for: Ornament, shade. **Invades:** Watercourses, floodplains. **Origin:** S USA and Mexico to Argentina. **NB:** Indigenous *P. africana* has shorter primary leaflets (4–15 cm) long and secondary leaflets usually absent.



Krissie Clark



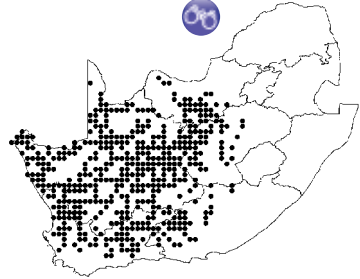


Prosopis glandulosa* var. *torreyana

honey mesquite

FABACEAE

Description: Multistemmed, hairless, Acacia-like shrub or small tree 2–4(–10) m high; spines paired, straight; branchlets reddish brown. **Leaves:** Dark green, leaflets 1–2.5 cm long, oblong, widely spaced. **Flowers:** Yellow, in axillary spikes, Jun–Nov. **Fruits:** Slender, woody pods (A), yellowish to purplish, nondehiscent, ~ straight, constricted between seeds. **NB:** Hybridizes with *P. velutina* (velvet mesquite) and *P. chilensis* (algarroba), making identification difficult. **Cultivated for:** Fodder, shade, fuel; honey source.



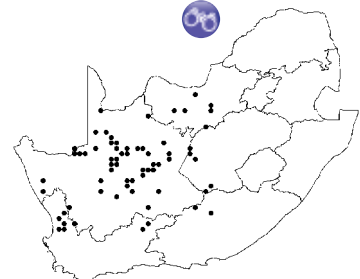
Invades: Riverbeds, riverbanks, drainage lines, roadsides, disturbed sites in karoo, semi-arid savanna and dry grassland. **Origin:** SW USA and N Mexico. **Irritant:** Respiratory tract (pollen).

Prosopis velutina

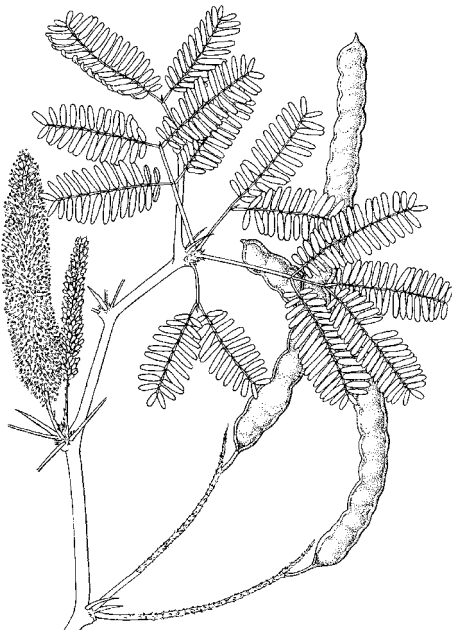
velvet mesquite

FABACEAE

Description: Multistemmed, Acacia-like shrub or small tree up to 4 m high; armed with paired, straight spines; all parts, at least initially, velvety hairy; branchlets reddish brown. **Leaves:** Greyish green to dark green; leaflets small (6–13 mm long), oblong, closely spaced. **Flowers:** Yellow, in axillary spikes, Jun–Nov. **Fruits:** Slender, woody pods, yellowish, ~ straight to markedly curved, constricted between seeds, nondehiscent. **NB:** Hybridizes, see *P. glandulosa* var. *torreyana*.



Cultivated for: Fodder, shade, fuel; honey source. **Invades:** Riverbeds, riverbanks, drainage lines, roadsides in karoo and semi-arid savanna. **Origin:** SW USA and N Mexico. **Irritant:** Respiratory tract (pollen).



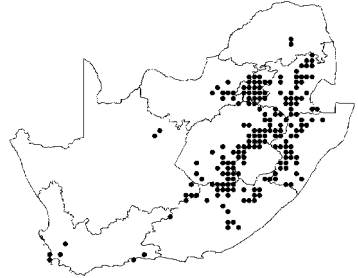


Pyracantha angustifolia

yellow firethorn

ROSACEAE

Description: Evergreen shrub 2–4 m high with stiff, spiny, horizontal branches; young shoots covered in thick, greyish yellow down; spines woody, sharp-pointed and bear leaves. **Leaves:** Dull dark green above, densely grey-downy beneath, narrowly elongate, margins entire, rolled under, apex rounded, often notched (A) or with a few pointed teeth. **Flowers:** White, calyx downy (B), ± 5 mm long, Oct–Dec. **Fruits:** Orange-red or orange-yellow berries, 5–8 mm across; immature fruits greyish downy.



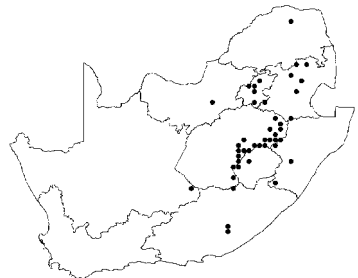
Cultivated for: Ornament, hedging, screens. **Invades:** High altitude grassland, forest and bush clumps, erosion channels, rocky ridges, watercourses. **Origin:** SW China. **Poisonous:** Seeds, in quantity.

Pyracantha crenulata

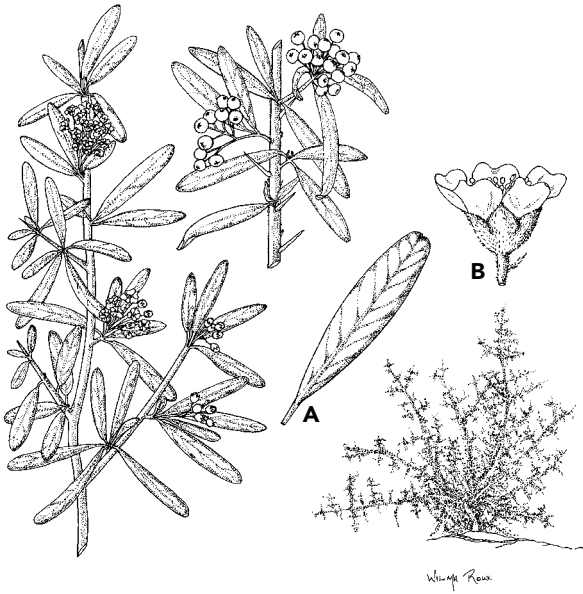
Himalayan firethorn

ROSACEAE

Description: Evergreen shrub 2–3 m high with stiff, spiny branches; young shoots covered in rusty down; spines woody, sharp-pointed, bearing leaves. **Leaves:** Bright, glossy green above, duller beneath, hairless, margins shallowly toothed (A); apex acute, bristle-tipped or rounded; base broadly tapering to slightly rounded. **Flowers:** White, calyx hairless (B), ± 4 mm long, on long, slender, hairless stalks, Aug–Oct. **Fruits:** Orange-red berries, 5–8 mm across, hairless, on long, slender, hairless stalks. **Cultivated for:** Ornament, hedging.



Invades: High altitude grassland, rocky ridges, watercourses. **Origin:** Himalayas to SW China. **NB:** Var. *rogersiana*: shoots becoming hairless and dark reddish brown; 'flava' has pale yellow fruits. **Poisonous:** Seeds, in quantity.



Trees & Shrubs Woody: leafy, spiny-stemmed



Quick key to *Pyracantha* species:

Leaf margin with rounded or pointed teeth

 Calyx and flower-stalks hairless..... *P. crenulata*

 Calyx and flower-stalks hairy

 Leaves widest above the middle, undersides hairless..... *P. crenatoserrata*

 Leaves widest below middle, undersides hairy when young *P. coccinea*

Leaf margins entire (not toothed)

 Undersides of leaves densely grey-hairy *P. angustifolia*

 Undersides of leaves with few hairs or hairless *P. koidzumii*



Pyracantha angustifolia



Pyracantha angustifolia



Pyracantha coccinea



Geoff Nichols
Pyracantha crenatoserrata

Pyracantha coccinea

red firethorn

ROSACEAE

Description: Evergreen shrub to 2(–6) m high with stiff, spiny branches; young shoots grey-downy; spines woody, sharp-pointed and bear leaves. **Leaves:** Bright, glossy green above, underside sparsely hairy when young; margin slightly scalloped, apex acute, leaf blade widest below middle. **Flowers:** White, calyx slightly downy, ± 8 mm across, stalks slightly downy, summer. **Fruits:** Bright orange-red berries, ± 10 x 8 mm; stalks slightly downy. **Cultivated for:** Ornament, hedging. **Invades:** High altitude grassland, watercourses, rocky ridges (G, FS, WC). **Origin:** Europe, Asia (Italy to Caucasus). **NB:** Cultivar 'Lalandei' has larger flowers and fruits. **Poisonous:** Seeds, in quantity.



Pyracantha crenatoserrata

Chinese firethorn, broad-leaf firethorn

ROSACEAE

Description: Evergreen shrub to 3(–6) m high with stiff, spiny branches; young shoots with rusty brown hairs; spines woody, sharp-pointed and bear leaves. **Leaves:** Bright, glossy green above, hairless, margin coarsely toothed; apex rounded, notched or sometimes with a bristle tip; leaf blade widest above the middle; base tapered. **Flowers:** White, calyx downy, ± 10 mm across, flower-stalks downy, spring–summer. **Fruits:** Bright orange-red or dark red berries, ± 5–7 mm across. **Cultivated for:** Ornament, hedging. **Potentially invasive:** In high altitude grassland. **Origin:** NW China. **Poisonous:** Seeds, in quantity.



Pyracantha koidzumii

Formosa firethorn

ROSACEAE

Description: Evergreen shrub to 3(–4) m high with stiff, spiny branches; young shoots grey downy; spines woody, sharp-pointed and bear leaves. **Leaves:** Bright, glossy green above, densely hairy beneath when young becoming hairless, narrowly elongate, margin entire, apex slightly notched or rounded. **Flowers:** White, ± 8–10 mm across, calyx and flower-stalks sparsely downy, spring–summer. **Fruits:** Bright orange-red berries, ± 4–5 mm across. **Cultivated for:** Ornament, hedging. **Potentially invasive:** In high altitude grassland. **Origin:** Taiwan. **Poisonous:** Seeds, in quantity.



Trees & Shrubs Woody: leafy, spiny-stemmed

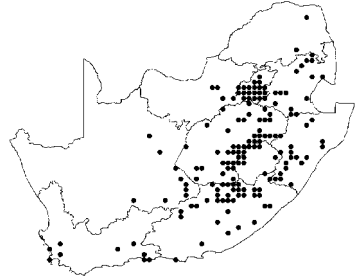


Robinia pseudoacacia

black locust

FABACEAE

Description: Deciduous tree 3–12(–25) m high with an oval or rounded crown; bark dark brown, deeply furrowed; suckers freely, forming thickets; young stems and branchlets with short, paired spines. **Leaves:** Bright green above, paler beneath, hairless, pinnate, with yellow autumn tints. **Flowers:** White (A), fragrant, in pendulous sprays 10–20 cm long, Sep–Nov. **Fruits:** Reddish brown pods (B), thin, persisting over winter. **Cultivated for:** Timber, fodder, ornament, shade, donga reclamation; honey source. **Invades:** Riverbanks, dongas, roadsides. **Origin:** C and E USA. **Poisonous:** Seeds, leaves, inner bark.

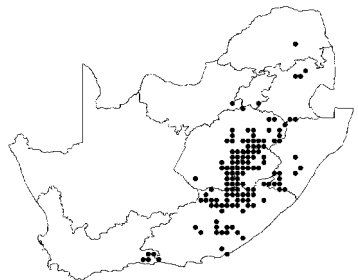


Rosa rubiginosa

eglantine, sweetbriar

ROSACEAE

Description: Compact, deciduous shrub 1–2 m high with slightly arching branches; thorns stout, hooked, interspersed with rusty, glandular hairs and bristles. **Leaves:** Shiny green above, rusty-hairy beneath; leaflets 5–7(–9), doubly toothed, densely glandular-hairy and resinous beneath, very aromatic. **Flowers:** Pink or white, in groups of 1–3, Oct–Dec. **Fruits:** Orange-red to scarlet, fleshy achenes ("hips") (A), ± 2 cm long. **Cultivated for:** Ornament, hedging; fruits harvested for juice. **Invades:** High altitude grassland, moist valleys, riverbanks, rocky outcrops, overgrazed land. **Origin:** Europe, Asia.

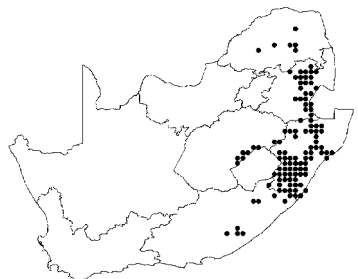


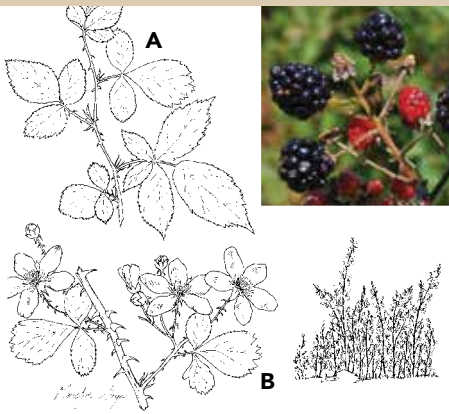
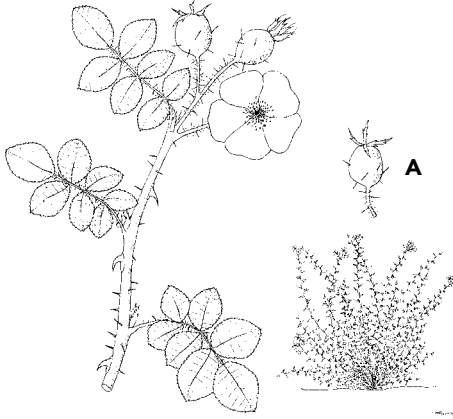
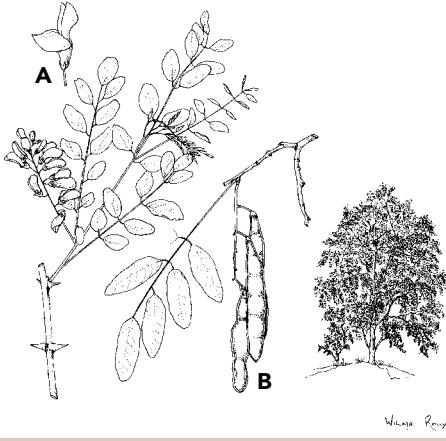
Rubus cuneifolius

American bramble

ROSACEAE

Description: Erect to sprawling, thorny shrub 0.5–1.5(–2) m high; stems deeply ridged. **Leaves:** Green, sometimes densely grey-downy beneath; usually 3-foliolate, sometimes also 5-foliolate (lateral leaves re-divided) on new season's growth (A); terminal leaflet usually wedge-shaped at the base. **Flowers:** White, rarely pink, petals much longer than sepals; few, 2–5(–10) at the ends of short, leafy shoots (B); axillary or terminal, Sep–Jan. **Fruits:** Red turning black, fleshy, shiny, aggregated berries. **Invades:** Grasslands, forest edges, plantations, riverbanks. **Origin:** E USA. **NB:** Several N American species could be included here.







Rubus ellipticus

yellow Himalayan raspberry, Asian wild raspberry

ROSACEAE

Description: Scrambling shrub with arching branches up to 7 m high; armed with scattered, recurved thorns, and numerous bristles which are red in young plants and brownish in older plants. **Leaves:** Dark green, 3-foliolate, leaflets elliptic to circular with toothed edges. **Flowers:** White, or yellow, petals much longer than sepals; stamens with broad, flattened filaments in a compact, circular arrangement; inflorescence short, axillary or terminal, early spring–summer. **Fruits:** Golden yellow when mature, fleshy, shiny. **Cultivated for:** Edible fruit. **Invades:** Disturbed sites in the Hillcrest area, KZN. **Origin:** Asia.

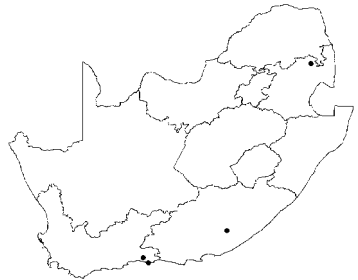


Rubus flagellaris

American dewberry

ROSACEAE

Description: Trailing shrub; stems thin, rounded, with few, slender, straight thorns 1–4 mm long; young stems green, ~ hairy; older stems brown, woody. **Leaves:** Bright green, usually 3-foliolate, sometimes 5-foliolate (lateral leaves re-divided) on both flowering and non-flowering stems; leaflets large, coarsely toothed, sparsely hairy above and hairy below. **Flowers:** White, large, petals ± 2 x 1 cm, much longer than sepals, in few-flowered (1–5) terminal inflorescences, spring–summer. **Fruits:** Red turning black, fleshy, shiny. **Cultivated for:** Edible fruit. **Invades:** Forest edges, roadsides. **Origin:** Canada, USA.

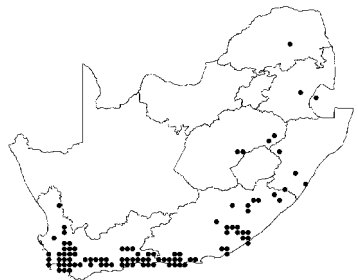


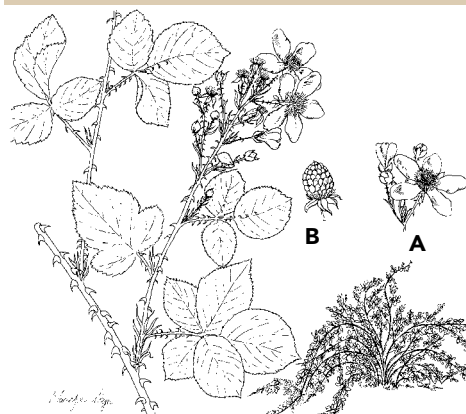
Rubus fruticosus

European blackberry

ROSACEAE

Description: Thorny shrub 1–2 m high; stems strongly arching, rounded or angled. **Leaves:** Green, sometimes grey-downy beneath; 3-foliolate and 5-foliolate (lateral leaflets re-divided), the latter on both flowering stems and non-flowering stems. **Flowers:** White or pink (A), petals much longer than sepals, in much-branched, very prickly inflorescences up to 15 cm long. Sep–Jan. **Fruits:** Red turning black, fleshy, shiny **(B)**. **Cultivated for:** Edible fruit. **Invades:** Grassland, fynbos, forest edges, plantations, roadsides, riverbanks. **Origin:** Europe. **NB:** Sochor et al 2018 describe this taxon as *Rubus bergii* and hybrids.







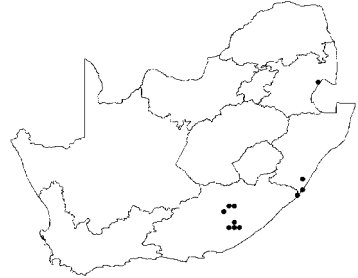
Rubus immixtus

Hogsback raspberry

ROSACEAE

Description: Erect to sprawling shrub; stems round, purplish with white powder, smooth to weakly armed.

Leaves: Discolorous, markedly white-velvety beneath, upper surface deeply veined; 3–5 pinnate. **Flowers:** Pink, petals about the same length as sepals, flowers fairly large (1–1.5 cm across), Sep–Jan. **Fruits:** Red, downy, aggregated berries. **Invades:** Grassland, fynbos, forest edges, plantations, stream edges, roadsides; common in Hogsback area of E Cape. **Origin:** Possibly European or a hybrid with the indigenous *R. rigidus*.



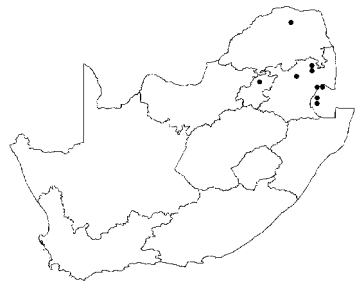
Rubus niveus

Ceylon raspberry, Mysore raspberry

ROSACEAE

Description: Thorny shrub to 2.5 m high; stems arching, rounded, rusty brown with whitish bloom.

Leaves: Dark yellow-green above, velvety white below; 3–5–7 foliolate (leaflets in opposite pairs and not re-divided), mostly 3–5 foliolate on flowering stems and 7-foliolate on non-flowering stems; deeply veined; side veins ~ parallel, closely spaced. **Flowers:** Bright pink, petals shorter than sepals, carpels numerous, spring–summer. **Fruits:** Orange turning red and finally greyish purple, white downy, many-seeded. **Cultivated for:** Edible fruit. **Invades:** Grassland, rocky sites, streambanks, plantations. **Origin:** Asia.

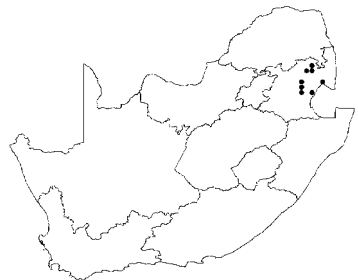


Rubus x proteus

hybrid bramble

ROSACEAE

Description: Thorny shrub to 2 m high; stems rounded to deeply ridged, smooth to hairy, thorns straight to recurved. **Leaves:** Green, sometimes paler below, 3–5 foliolate (lateral leaflets in opposite pairs or re-divided) on flowering stems; 5–7–9 foliolate (lateral leaflets re-divided) on non-flowering stems; leaflets often very large (> 10 cm long). **Flowers:** White or pink, petals longer, equal to or less than sepals; inflorescence short or long, slightly or very prickly, spring–summer. **Fruits:** Yellow turning red or black. **Invades:** Grassland, forest edges, plantations, streambanks, roadsides. **Origin:** S Africa; natural hybrid swarm in Mpumalanga.





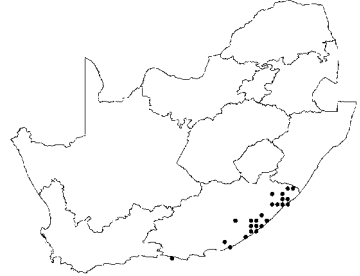


Solanum chrysoctrichum

giant devil's fig

SOLANACEAE

Description: Evergreen shrub or small tree to 3 m high; scattered prickles 2–6 mm long on stems, stalks and leaf veins; differs from other *Solanum* spp. by its coarse, reddish brown hairs on stems, undersurfaces of leaves and calyx. **Leaves:** Green, lower surface with reddish brown hairs, particularly on main veins; margin wavy to deeply 7–13 lobed; to 30 x 40 cm. **Flowers:** White, 3–5 cm across, in branching inflorescences, all year. **Fruits:** Green turning orange-yellow, berries, 1–1.5 cm across.



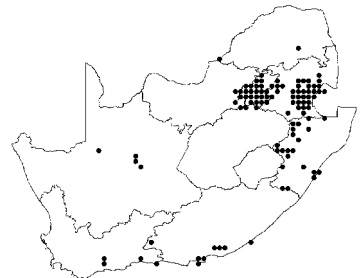
Cultivated for: Hedging. **Invades:** Grassland, savanna, forest edges, plantations, streambanks, roadsides. **Origin:** Mexico and C America. **Poisonous:** Suspected of poisoning livestock.

Solanum sisymbriifolium

dense-thorned bitter apple

SOLANACEAE

Description: Much-branched, very spiny, low shrub 0.5–1.5 m high, with extensive root system; all parts covered with sticky, glandular hairs and bright orange-red to brown-yellow spines up to 2 cm long. **Leaves:** Dull green, spiny, glandular-hairy, deeply pinnately lobed and toothed, up to 20 cm long; spines mainly on midrib and veins. **Flowers:** White, cream or bluish, all year. **Fruits:** Shiny berries, green turning bright red, about 1.5 cm across.



Invades: Wasteland, roadsides, disturbed grassland, tramped-out veld, agricultural lands, forestry plantations. **Origin:** S America. **Poisonous:** Unripe fruit.





Berberis aristata

Indian barberry

BERBERIDACEAE

Description: Evergreen, spiny shrub 2–3 m tall; young shoots rounded to slightly grooved, yellow; spines 1–3 cm long, 3-fid at each shoot node. **Leaves:** Bright green, leathery, stiff, leaf margins entire or with 1–4 pairs of distant, large, spiny teeth, elliptic to obovate, 2–7 cm long. **Flowers:** Yellow; ± 12 mm across, 15–30 in branched racemes, 4–7 cm long, spring–early summer. **Fruits:** Dark red to black berries, globose to ovoid, 7–8 mm long. **Cultivated for:** Ornament, hedging. **Invades:** Plantations, streambanks (L: Woodbush Forest Reserve). **Origin:** India (Himalayas).



Jan-Hendrik Keet

Berberis julianae

Chinese barberry

BERBERIDACEAE

Description: Evergreen, spiny shrub 1–3 m tall; young shoots angled, pale yellow; spines stout, 1–4 cm long, 3-fid at each shoot node. **Leaves:** Glossy green, leaf margins with 10–20 pairs of spiny teeth, elliptic to obovate, 3–7 cm long. **Flowers:** Yellow; ± 10 mm across, usually 10–20 in simple clusters, spring–early summer. **Fruits:** Blue-black berries, oblong, 7–8 mm long. **Cultivated for:** Ornament, hedging. **Invades:** Grasslands, streambanks (FS: Golden Gate, Platberg). **Origin:** China.



Jan-Hendrik Keet

Berberis thunbergii

Japanese barberry

BERBERIDACEAE

Description: Deciduous, spiny shrub 1–2 m tall; young shoots grooved, dark red; a single spine (occasionally 3-fid) at each shoot node. **Leaves:** Green to blue-green; cultivars with yellow, red or variegated leaves; spatula to oval-shaped, 10–15 (rarely to 20) mm long, leaf margins entire, in clusters on a dwarf shoot in the axil of each spine. **Flowers:** Pale yellow; \pm 10 mm across, usually 2–5 in drooping clusters (umbels), spring–early summer. **Fruits:** Red berries, glossy, elliptic, 7–8 mm long, on long, thin stalks. **Cultivated for:** Ornament, hedging, edible fruit. **Potentially invasive:** Forests, grasslands, wetlands. **Origin:** Japan.



Rosa multiflora

multiflora rose

ROSACEAE

Description: A wide-spreading bush to 3 m high; stems long, arching, hairless, with stout, scattered thorns. **Leaves:** Bright green; leaflets 5–10, toothed, slightly downy when young; stipules distinctive, deeply fringed (cut into narrow lobes). **Flowers:** White, pale pink or deep pink; double- or single-flowered; small, to 2.5 cm wide, in many-flowered, branching clusters at tips of stems; calyx-tube and flower-stalk hairy; sepals reflexed, white-woolly and glandular; Oct–Nov. **Fruits:** Red, “hips”, 6 mm long. **Cultivated for:** Ornament, hedging. **Invades:** Scrub, moist sites (L, M, KZN, EC, WC). **Origin:** China, Japan.





Bauhinia purpurea

butterfly orchid tree

FABACEAE

Description: Mainly evergreen tree 6–10 m high; trunk smooth, greyish, branching near the ground. **Leaves:** Light green, thick, deeply divided into 2 lobes, to 10 cm long. **Flowers:** Pink, blotched or striped with red, cream or purple, 8–10 cm wide (**A**); petals narrow to 1.8 cm wide and not overlapping; 3 fertile stamens; buds (**B**) deeply ribbed; fragrant, in few-flowered, terminal or axillary sprays; flowering with the leaves, Aug–Oct. **Fruits:** Brown pods (**C**) 15–30 cm long, opening with explosive dehiscence. **Cultivated for:** Ornament. **Invades:** Savanna, coastal bush, urban open space. **Origin:** Tropical Asia.

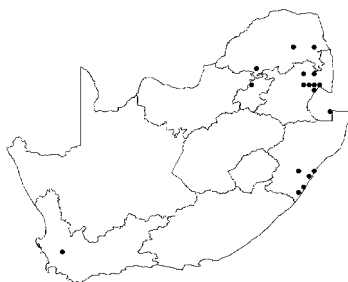


Bauhinia variegata

orchid tree

FABACEAE

Description: Deciduous or semi-evergreen tree 6–10 m high; trunk smooth, greyish, branching near the ground. **Leaves:** Light green, thick, deeply divided into 2 lobes, to 10 cm long. **Flowers:** Pink blotched or striped with red, cream or purple or pure white (var. candida), 8–10 cm wide; petals to 3 cm wide and overlapping; 5 fertile stamens; buds not ribbed; fragrant; in few-flowered, terminal or axillary sprays; flowering with or after leaf fall, Aug–Oct. **Fruits:** Pods 15–30 cm long, opening with explosive dehiscence. **Cultivated for:** Ornament. **Invades:** Savanna, coastal bush, urban open space. **Origin:** Temperate and tropical Asia.

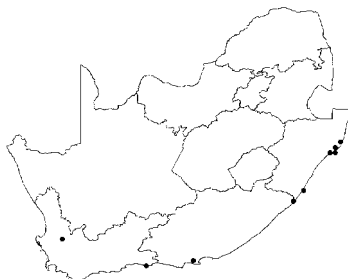


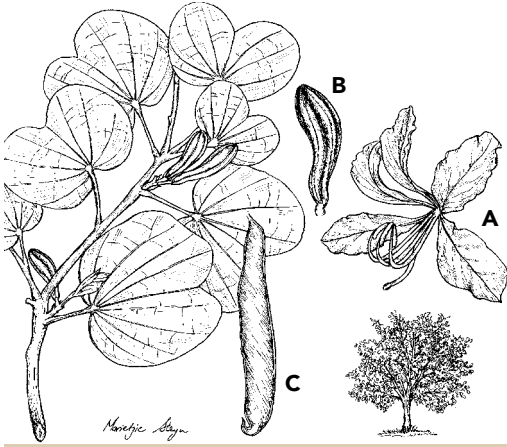
Grevillea banksii

Australian crimson oak

PROTEACEAE

Description: Evergreen, usually large, spreading shrub 2–3 m high (sometimes called ‘variety Forsteri’), or tree up to 10 m. **Leaves:** Silvery green, leathery, silky beneath, divided into 5–11, narrowly elliptic to linear lobes, with entire margins, 5–18 x 0.5–1.5 cm wide. **Flowers:** Red, with long-exserted styles, in erect, bottlebrush-like sprays to 18 x 4 cm at the ends of branches; intermittent through the year. **Fruits:** Follicles, 1.5–2.5 cm long, densely covered in short, soft hairs. **Cultivated for:** Ornament, hedging. **Invades:** Coastal grassland. **Origin:** NE Australia. **Irritant:** Skin (sap).





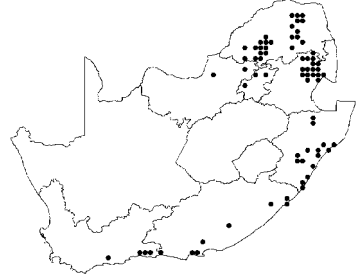


Grevillea robusta

Australian silky oak

PROTEACEAE

Description: Large, evergreen tree 18–30 m high with a straight trunk and moderately spreading crown. **Leaves:** Dark green above, greyish white or rusty-silky beneath, two-pinnatifid, deeply incised, fern-like, 15–30 cm long, leaflet margins recurved. **Flowers:** Golden-orange, stalked, 2–3 cm long, in terminal, bottlebrush-like sprays 8–15 cm long, Sep–Nov. **Fruits:** Brownish black, leathery follicles about 2 cm long, containing 1 or 2 flat, winged seeds. **Cultivated for:** Ornament, shade, timber, shelter. **Invades:** Forest margins, moist savanna, riverbanks. **Origin:** E Australia. **Irritant:** Skin, eyelids (sap).



Jatropha gossypifolia

cotton-leaf physic nut

EUPHORBIACEAE

Description: Deciduous or evergreen shrub to 2m high; main stem woody at the base, branchlets thick, semi-woody, exuding brownish latex. **Leaves:** Reddish brown or purplish green, deeply 3–5 lobed; leaf margins and stalks glandular-hairy; blade 6–10 x 8–14 cm. **Flowers:** Red, small, in branching inflorescences to 11 cm long, summer–autumn. **Fruits:** Green turning brown, 3-lobed capsules, ± 1 cm long, splitting to release 3 light brown seeds ± 7 mm long. **Cultivated for:** Hedging; purgative. **Invades:** Watercourses, dongas, overgrazed land, roadsides, around habitation. **Origin:** Tropical America. **Poisonous:** Leaves, seeds.

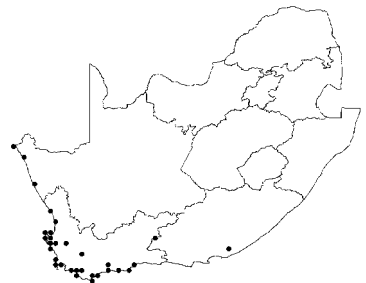


Malva arborea (= *M. dendromorpha*)

tree mallow

MALVACEAE

Description: Branched, biennial shrub or small tree to 3m high; stem greyish white and woody at the base; younger parts velvety hairy. **Leaves:** Light green, velvety hairy, 5–7 lobed, up to 20 cm long, stipules narrow. **Flowers:** Bright pink or lilac, with dark veins and throat, 3–4 cm across, in clusters of 2–7 in leaf axils; 3 bracts, longer than sepals, united at base of calyx, Sep–Dec(–all year). **Fruits:** Small brown, dry, dehiscing into 6–8, 1-seeded segments. **Cultivated for:** Ornament, fodder; honey source. **Invades:** Roadsides, waste places, sand dunes, rocky places, in coastal areas. **Origin:** Europe, N Africa.







Montanoa hibiscifolia

tree daisy

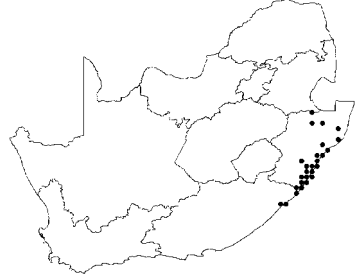
ASTERACEAE

Description: Perennial, scarcely branching shrub or small tree to 6 m high. **Leaves:** Dark green above, paler below, softly hairy on both surfaces, up to 25 x 25 cm, broadly ovate in outline, deeply palmately lobed (A), with a pair of ear-like lobes at base of blade.

Flowerheads: Petals (ray-florets) white, disc yellow; about 4 cm across; in terminal, branched inflorescences, May–Oct. **Fruits:** Reddish brown achenes, 3.5 mm long, borne in rounded, papery, old flowerheads (B).

Cultivated for: Ornament. **Invades:** Forest, woodland, bush clumps, roadsides, riverbanks, disturbed sites.

Origin: S Mexico, C America.



Ricinus communis

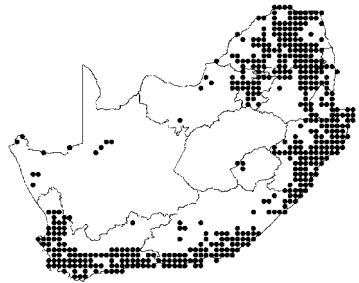
castor-oil plant

EUPHORBIACEAE

Description: Softly woody shrub or small tree to 4 m high; sap not milky (as in *Jatropha* spp.), leaf and flowering stalks often with a grey bloom. **Leaves:** Shiny, dark green or reddish, large, to 30 cm wide, palmately 5–9 lobed, margins closely toothed, on long stalks.

Flowers: Reddish (upper), cream (lower), on stalks to 15 cm long, Aug–Apr(–all year). **Fruits:** Green, brown or reddish, 3-lobed, softly spiny capsules (A); seeds silvery mottled-brown ‘beans’. **Cultivated for:** Ornament, castor-oil. **Invades:** Rivers, roadsides, wasteland.

Origin: Tropical Africa. **Poisonous:** Whole plant; seed highly toxic and lethal.



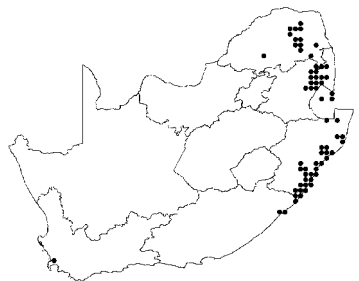
Tithonia diversifolia

Mexican sunflower

ASTERACEAE

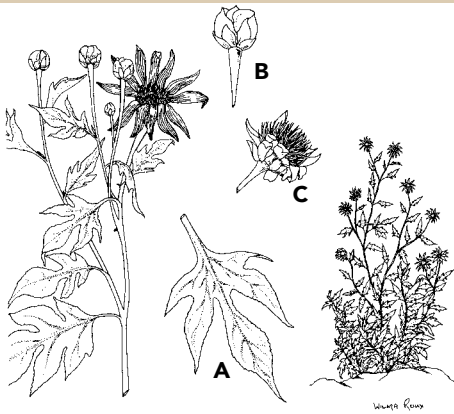
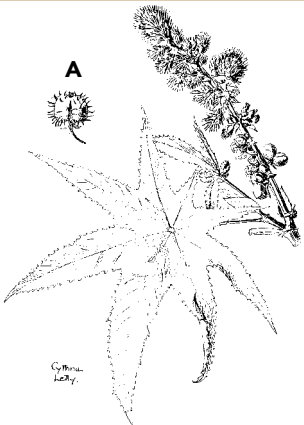
Description: Bushy annual or perennial, woody at the base, 1.5–3.5 m high. **Leaves:** Dark green, hairy, often pale-velvety below, to 15 x 12 cm, ~ ovate, usually deeply 3–5 lobed (A), stalks winged. **Flowerheads:** Bright yellow, to 10 cm across, solitary on long stalks much swollen and velvety below the heads; several together in branched clusters; buds (B) rounded; bracts below petals (ray-florets) in about 4 series; inner bracts with rounded, papery tips; Apr–Jun. **Fruits:** Achenes, in a rounded, spiky mass (C). **Cultivated for:** Ornament. **Invades:** Savanna, grassland, roadsides, riverbanks.

Origin: Mexico, C America.





Geoff Nichols



Geoff Nichols



Acer buergerianum

Chinese maple

SAPINDACEAE



Description: Small, deciduous tree to 10 m high with an erect, slender stem and flaky, brown bark. **Leaves:** Dark green, glossy, turning red in autumn; 3-lobed, with 3 main veins from the base ending in pointed lobes; margins toothed and lobes outward-pointing (young trees) or margins smooth and lobes forward-pointing (mature trees); 6–10 cm long. **Flowers:** Whitish, small, in terminal clusters ± 3 cm across, spring. **Fruits:** Yellowish brown, paired, winged nutlets (samaras), in congested bunches 1–3 cm across. **Cultivated for:** Ornament. **Invades:** Forest margins, streambanks in cool regions (G, L, KZN, EC). **Origin:** E China, Taiwan.



Ficus carica

edible fig

MORACEAE



Description: Deciduous shrub or small tree to 3m high; bark greyish brown with distinct lenticels; stem exudes milky juice when broken. **Leaves:** Dark green, rough above, hairy below, with 3–5, deep, rounded lobes; 10–20 cm long and wide; papery to slightly leathery. **Flowers:** Very tiny, enclosed within a hollow receptacle or ‘fig’. **Fruits:** Seed-like achenes, embedded in fleshy ‘figs’ that are green turning purple or brown, pear-shaped, 5–8 cm long. **Cultivated for:** Edible fruit. **Invades:** Watercourses, wetlands, roadsides, around habitation, in forest, fynbos, savanna and karoo vegetation types mainly in WC. **Origin:** S Europe, N Africa and Asia.



Lyn Fish

Jatropha curcas

physic nut

EUPHORBIACEAE

Description: Deciduous or evergreen shrub or small tree 2–6 m high; bark light brown to grey-green, smooth, papery, peeling; branchlets thick, semi-succulent; latex watery, sticky. **Leaves:** Green, ovate-rounded with 3–5 shallow lobes, blade 5–15 cm long, stalk to 20 cm long. **Flowers:** Yellowish green, petals $\pm 7 \times 3$ mm long, in branching inflorescences to 10 cm long, summer. **Fruits:** Green turning brown, $\pm 2.5 \times 3$ cm, slightly 3-lobed, splitting to release 3 blackish seeds ± 2 cm long. **Cultivated for:** Hedging; oil extracted from seed; purgative. **Invades:** Watercourses, dongas, roadsides, around habitation (L). **Origin:** Mexico, C and S America. **Poisonous.** Leaves, seeds.



Quercus robur

English oak

FAGACEAE

Description: Deciduous, hairless, wide-spreading and rugged tree 15–30 m high. **Leaves:** Bright green turning dark green, paler below, obovate to oblong, margins wavy, 3–6 lobed on each side with 2 small ear-like lobes at the base, very shortly stalked. **Flowers:** Male catkins greenish yellow; female catkins brownish purple; Aug–Sep. **Fruits:** Acorns, brownish, ovoid, 1.8–3 cm long; 1 to several on long, slender stalks 5–10 cm long. **Cultivated for:** Ornament, shade; provides fodder (fruits). **Invades:** Forest margins, woodland, riverbanks (FS, M, KZN, EC, WC). **Origin:** Europe, W Asia. **Poisonous:** Green fruits and young shoots toxic to livestock.



Trees & Shrubs Woody: leaves simple, long

Acacia cyclops

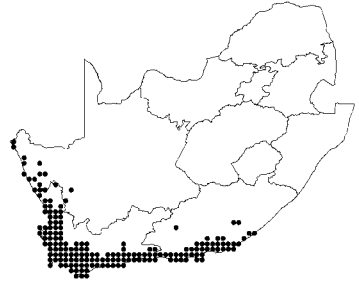
red eye

FABACEAE

Description: Unarmed, evergreen, rounded shrub or small tree 1.5–4(–6) m high; low and wind-clipped at the coast. **Leaves:** Phyllodes, bright green, ~ straight, with 3–5 prominent longitudinal veins. **Flowers:** Bright yellow, globular heads, sporadic, Oct–Feb(–all year).

Fruits: Pods, as broad as leaves, 8–12 mm wide, twisted, persisting after seeds shed; seeds encircled by double row of bright red or orange, fleshy stalks; pods often deformed (A) by an introduced midge. **Cultivated for:** Dune reclamation, shelter; provides firewood. **Invades:** Fynbos, forest gaps, dunes, roadsides, watercourses.

Origin: SW Australia.



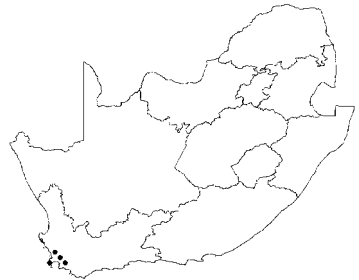
Acacia implexa

screw-pod wattle

FABACEAE

Description: Unarmed, evergreen, small tree 3–15 m high, often suckering. **Leaves:** Phyllodes, greyish green, markedly curved, pendulous (more drooping and thinner than in *A. melanoxylon*), with several prominent longitudinal veins and fine net-veins between. **Flowers:** Pale yellow, globular heads, Dec–Mar. **Fruits:** Pods, long, narrow (to 25 x 0.4–0.7 cm), ~ straight when young, becoming strongly curved and twisted after dehiscence; seed with fleshy, white, seed stalk folded at one end but not encircling it. **Cultivated for:** Ornament, shade. **Invades:** Fynbos, watercourses.

Origin: E Australia.



Acacia longifolia

long-leaved wattle

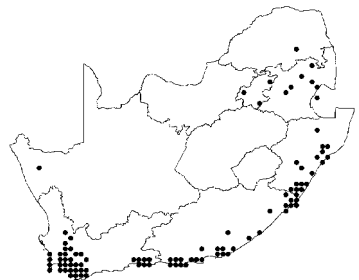
FABACEAE

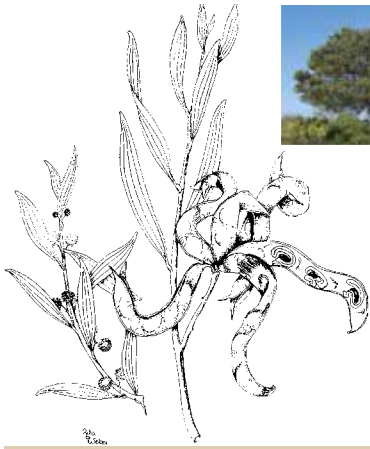
Description: Unarmed, evergreen shrub or spreading tree 2–6(–10) m high; stems usually have smooth, spherical outgrowths or galls (caused by an introduced wasp); the galls are green turning brown, replacing flower and leaf buds. **Leaves:** Phyllodes, bright green, to 18 cm long, with 2–5 prominent longitudinal veins.

Flowers: Bright yellow, cylindrical heads up to 5 cm long and 7 mm wide, in the axils of the leaves, Jul–Sep.

Fruits: Pods, beaked apically, constricted between the seeds. **Cultivated for:** Dune reclamation, shade, ornament. **Invades:** Fynbos, woodland, watercourses.

Origin: SE Australia.





Trees & Shrubs Woody: leaves simple, long

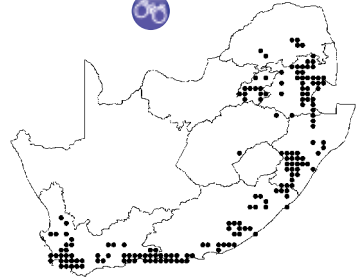
Acacia melanoxylon

Australian blackwood

FABACEAE

Description: Unarmed, evergreen tree 8–15(–20) m high; trunk straight; crown dense, pyramidal to cylindrical.

Leaves: Phyllodes (**A:** mature; **B:** immature), greyish turning dark dull-green, ~ erect, straight to slightly curved, with 3–7 prominent longitudinal veins and fine net-veins between; often bipinnate (C) on young plants and coppice shoots. **Flowers:** Pale yellow, globular heads, Aug–Sep. **Fruits:** Pods, narrower than leaves, twisted; seeds almost encircled by pinkish red seed stalks. **Cultivated for:** Timber, shelter, ornament. **Invades:** Forests, plantations, watercourses, roadsides. **Origin:** S and E Australia.

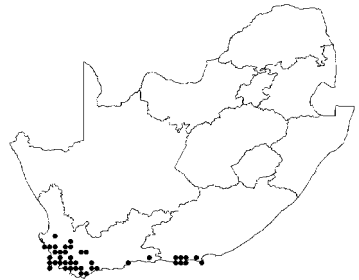


Acacia pycnantha

golden wattle

FABACEAE

Description: Unarmed, slender, evergreen tree 4–8 m high with pendulous branchlets, resembling some *Eucalyptus* spp.; stems have spherical, usually knobby galls caused by an introduced wasp. **Leaves:** Phyllodes, dull green, leathery, to 20 cm long, markedly curved with a single, prominent midvein and raised margins; leaf tip rounded; gland at base of each leaf. **Flowers:** Bright yellow, globular heads in large sprays, Aug–Sep. **Fruits:** Pods, ~ straight, slightly constricted. **Cultivated for:** Dune reclamation, ornament, tanbark. **Invades:** Coastal and mountain fynbos, rivers, roadsides. **Origin:** S and SE Australia.

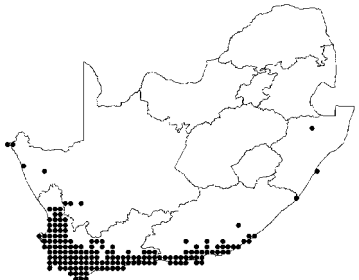


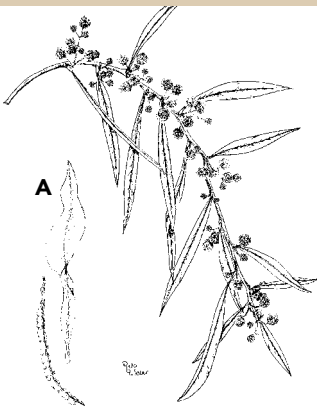
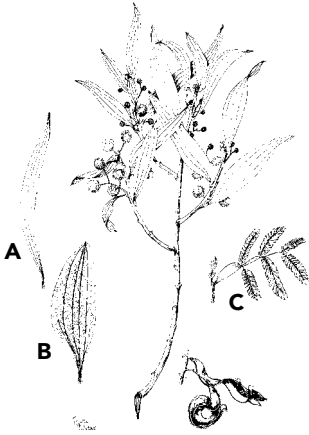
Acacia saligna

Port Jackson

FABACEAE

Description: Unarmed, evergreen shrub or tree 3–7(–10) m high with a willow-like appearance; stems usually deformed by large, brown, irregularly shaped galls (caused by an introduced rust fungus). **Leaves:** Phyllodes, blue-green turning bright green, to 20 x 1–5 cm, slightly erect to pendulous, with a single midvein, wider and wavy on young plants (A). **Flowers:** Bright yellow, globular flowerheads, Aug–Nov. **Fruits:** Pods, with hardened, whitish margins. **Cultivated for:** Dune reclamation, shelter, tanbark; provides fodder. **Invades:** Fynbos, woodland, coastal dunes, roadsides, watercourses. **Origin:** SW Australia.





Stefan Nesper

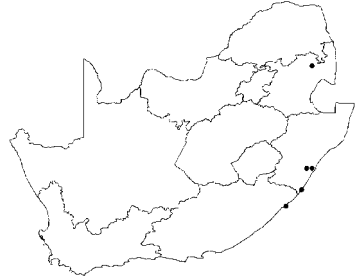
Trees & Shrubs Woody: leaves simple, long

Ardisia crenata

coralberry tree, coral bush

PRIMULACEAE

Description: Compact, evergreen, hairless shrub up to 2 m high; stems continue to grow beyond the lateral flowering branches. **Leaves:** Bright green, elliptic-lanceolate or oblanceolate, with 12–18 pairs of indistinct lateral veins, margins minutely wavy and toothed, 7–20 x 2–4 cm. **Flowers:** White or pink, 5-petaled, ± 6 mm long, in terminal, umbel-like clusters, Jun–Jan. **Fruits:** Coral-red, 1-seeded drupes, ± 6 mm across, on long stalks; long-lasting, in drooping clusters. **Cultivated for:** Ornament. **Invades:** Forest margins and understories; riverbanks in swamp forest; shaded habitats. **Origin:** India to Japan.

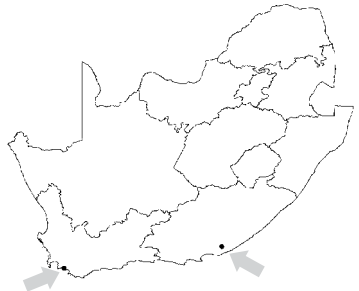


Callistemon citrinus (= *Melaleuca citrina*)

lemon bottlebrush

MYRTACEAE

Description: Evergreen, densely branching, erect shrub usually 1–3 m high. **Leaves:** Green, lanceolate, 3.5–10 cm long, 5–25 mm wide; apex usually shortly tapering with a stiff, sharp point, base tapering, venation obvious on both surfaces, glands sometimes conspicuous, faintly lemon-scented when crushed. **Flowers:** Bright red (filaments), anthers dark red, in spikes 6–12 x 3–7 cm, Nov–Dec. **Fruits:** Capsules 4–7 mm across. **Cultivated for:** Ornament. **Invades:** Fynbos, in moist sites. **Origin:** S and E Australia (occurring in coastal swamps and watercourses).

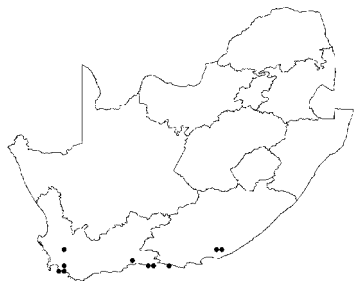


Callistemon linearis (= *C. rigidus*, *Melaleuca linearis*)

stiff-leaved bottlebrush

MYRTACEAE

Description: Evergreen, stiff, erect shrub usually 2–3 m high. **Leaves:** Green, linear to elliptic, 3–10 cm long, 2–4 mm wide; margins thickened; apex tapering gradually to a narrow point; lamina thick, rigid; lower surface dotted with glands; lateral veins generally obscure. **Flowers:** Red (filaments), anthers dark, in spikes 7–10 x 4–6 cm, summer. **Fruits:** Capsules, 5–7 mm across. **Cultivated for:** Ornament. **Invades:** Grassland, fynbos, watercourses. **Origin:** SE Australia (in damp places). **NB:** *C. rugulosus* has broader leaves, 4–7 mm wide, with prominent glands; leaf tips abruptly pointed; anthers yellow.



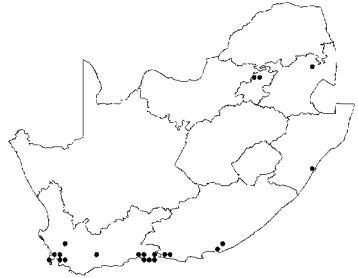


Trees & Shrubs Woody: leaves simple, long

Callistemon viminalis (= *Melaleuca viminalis*)
weeping bottlebrush

MYRTACEAE

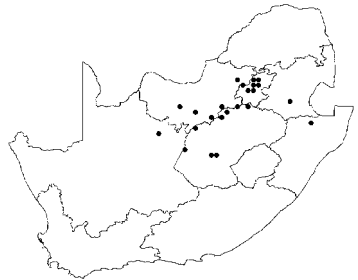
Description: Evergreen shrub or small tree to 8 m high with a weeping habit; bark grey and furrowed. **Leaves:** Green, linear to lanceolate, with one side straighter than the other; 3–7 cm long and 4–9 mm wide; apex acute; lateral veins obscure. **Flowers:** Bright red (filaments: fused into a ring at the base and shed as a unit), spring–early summer (–all year). **Fruits:** Capsules, 5–6 mm across. **Cultivated for:** Ornament. **Invades:** Watercourses. **Origin:** E Australia (occurring mainly in watercourses).



Cestrum parqui
Chilean cestrum

SOLANACEAE

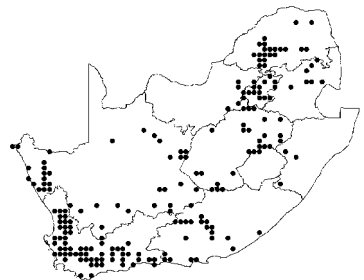
Description: Evergreen, mostly hairless, shrub 1–2(–3) m high producing suckers; bruised stems and leaves emit an unpleasant smell. **Leaves:** Yellowish to dark green, mainly towards ends of branches, narrowly lanceolate, to 15 x 1.5–2.5 cm. **Flowers:** Greenish yellow or brownish, tubular, in axillary and terminal, compact clusters, fragrant, Oct–May. **Fruits:** Berries, ± 1 cm long, green turning purple-black. **Cultivated for:** Ornament, hedging. **Invades:** Urban open space, roadsides, savanna, riverbanks. **Origin:** S America. **Poisonous:** Lethally toxic (cattle, sheep). **NB:** *C. laevigatum* (page 242): broader leaves, flowers axillary.

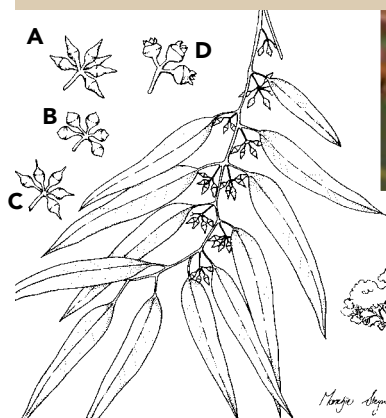


Eucalyptus camaldulensis
river red gum

MYRTACEAE

Description: Evergreen tree 18–40 m high with a spreading crown and smooth, mottled, white or grey bark, often tinged red in very cold localities. **Leaves:** Pale dull green; adult leaves 12–22 cm long, narrow, pendulous, juvenile leaves smaller and broader; twigs and stalks red. **Flowers:** Cream, in simple umbels, buds conical (A), ovoid (B), or beaked (C), with bud lid 4–6 mm long, Sep–Jan(–all year). **Fruits:** Brown to reddish brown capsules (**D**), 5–8 mm long, with prominent rims and protruding triangular valves. **Cultivated for:** Shelter, timber, firewood, ornament; honey source. **Invades:** Watercourses. **Origin:** Australia.





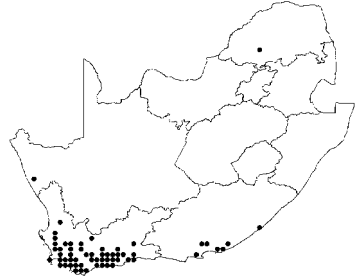
Trees & Shrubs Woody: leaves simple, long

Eucalyptus cladocalyx

sugar gum

MYRTACEAE

Description: Slender, evergreen tree 15–40 m high with smooth, flaky, tan-coloured bark; foliage concentrated at ends of branches. **Leaves:** Dark green, glossy above, pale below; adult leaves pendulous, 8–14 cm long, sweet-tasting; juvenile leaves **(A)** elliptic with reddish stalks. **Flowers:** Cream **(B)**, in simple umbels, buds (C) ribbed with round lids, to 11 mm long, Oct–Feb. **Fruits:** Capsules **(D)**, to 16 mm long, ovoid, ribbed, valves deeply enclosed. **Cultivated for:** Shelter, timber, firewood; honey; indispensable for bee-keeping industry. **Invades:** Fynbos, forest gaps, plantations, watercourses. **Origin:** S Australia.

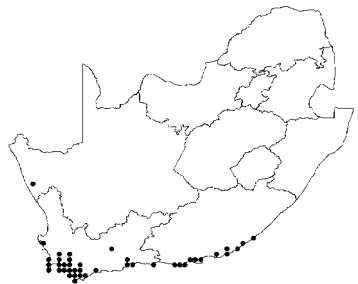


Eucalyptus conferruminata

'spider gum'

MYRTACEAE

Description: Dense, rounded, bushy, evergreen tree 6–10(–19) m high, branching near ground level, bark smooth grey-brown. **Leaves:** Light green; adult leaves 7–9 cm long, more tapering than juvenile leaves **(A)**. **Flowers:** Greenish yellow, in large, fused clusters (B), buds capped with elongated, curved, finger-like lids, ± 5 cm long, Jun–Jan. **Fruits:** Greyish brown capsules, fused into a wooden mass up to 5 x 8 cm. **Cultivated for:** Shelter, sandbinding, timber; honey source. **Invades:** Coastal fynbos, coastal dunes. **Origin:** SW Australia. **NB:** Previously incorrectly identified as *E. lehmannii* in South Africa.



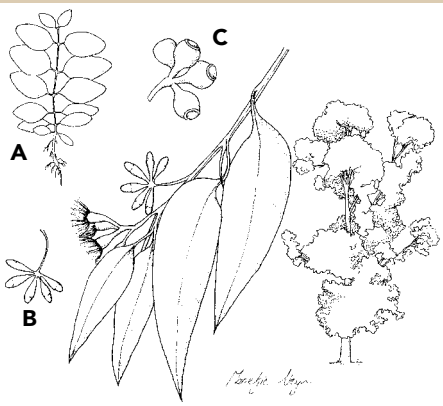
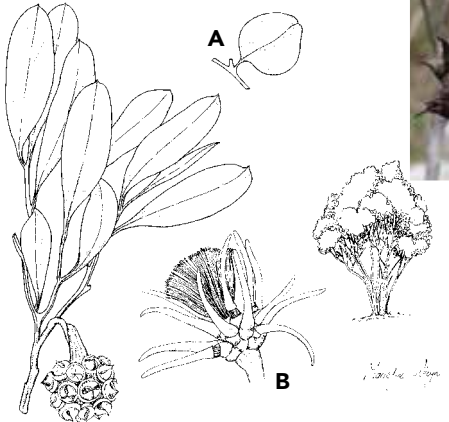
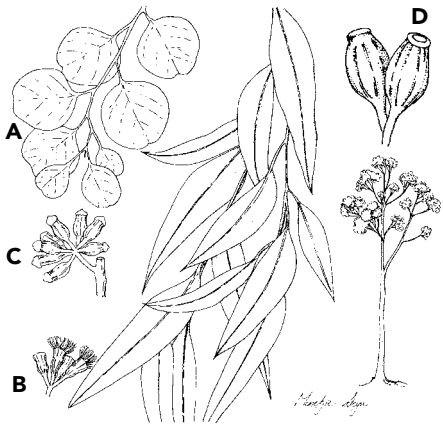
Eucalyptus diversicolor

karri

MYRTACEAE

Description: Tall, dense, massively branched, evergreen tree 25–58 m high; bark smooth (except for a little rough bark persisting at butt), grey to blue and orange-yellow in blotches. **Leaves:** Dark green, glossy above, pale below; adult leaves lanceolate, 10–14 cm long; juvenile leaves **(A)** broader or ovate, 4–8 cm long. **Flowers:** Cream, in simple umbels, buds (B) with conical lids, to 14 mm long, May–Dec(–all year). **Fruits:** Brown capsules **(C)**, to 12 mm long, globose, valves enclosed. **Cultivated for:** Shelter, timber, ornament; honey source. **Invades:** Forest gaps, fynbos, watercourses. **Origin:** SW Australia.





Trees & Shrubs Woody: leaves simple, long

Eucalyptus grandis

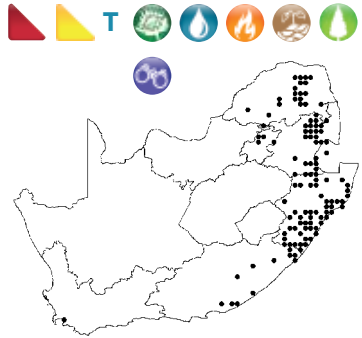
saligna gum, rose gum

MYRTACEAE

Description: Evergreen tree, trunk shaft-like, to 55 m high; bark smooth except butt to 4 m, peeling in strips to expose a powdery, white or blue-grey surface.

Leaves: Dark green, glossy above, paler below; adult leaves 13–20 cm long, similar to juvenile leaves (A).

Flowers: Cream, in simple umbels (B), buds (C) to 8 mm long, pear-shaped with conical lids, flowering-stalks flattened, Apr–Aug. **Fruits:** Capsules, with bluish grey bloom, pear-shaped, 7–10 mm long, valves protrude and arch inwards (D). **Cultivated for:** Shelter, timber; honey source. **Invasives:** Forest gaps, plantations, watercourses. **Origin:** E Australia.



Eucalyptus tereticornis

forest red gum

MYRTACEAE

Description: Evergreen tree to 50 m high; bark smooth, white, grey or blue-grey. **Leaves:** Adult leaves shiny green, 10–20 cm long, narrowly lanceolate; juvenile leaves ovate, dull green to blue-green; twigs and stalks red. **Flowers:** Cream, in simple umbels; buds conical, with bud lid 8–13 mm long; Jun–Nov.

Fruits: Brown capsules, 5–7 mm long, with prominent rims and protruding triangular valves. **Cultivated for:** Shelter, timber, firewood, ornament; honey source. **Invasives:** Watercourses. **Origin:** E Australia. **NB:** Can be confused with *E. camaldulensis*; distribution in South Africa uncertain.

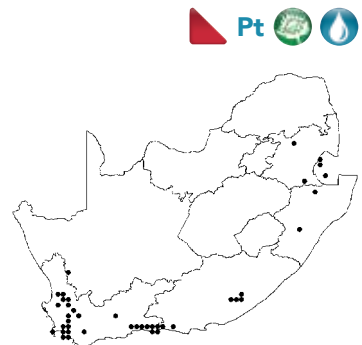


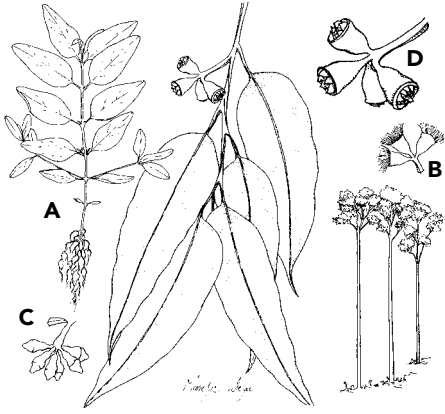
Hakea salicifolia

willow hakea

PROTEACEAE

Description: Evergreen shrub or bushy tree 2.5–5.5(–8) m high, hairless except for the young shoots which are silky. **Leaves:** Pale or greyish green to dark green; new foliage reddish; leathery, flat, linear to lanceolate, 5–10 cm long, 6–17 mm wide; obscurely veined. **Flowers:** White, small, in dense, axillary clusters, scented, Sep(–Jan). **Fruits:** Woody capsules, ± 2 x 2 cm, grey with dark warts, usually 1 or 2 together, splitting into 2 equal halves, each containing 1 winged seed; seed shed as soon as it is ripe. **Cultivated for:** Hedging, shelter, ornament. **Invasives:** Watercourses, wetlands, roadsides. **Origin:** E Australia.





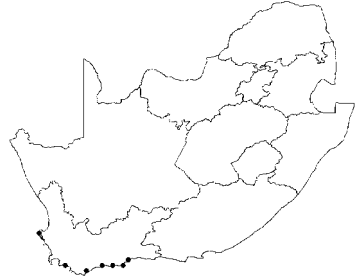
Trees & Shrubs Woody: leaves simple, long

Myoporom insulare

manatoka, common boobialla

SCROPHULARIACEAE

Description: Evergreen, somewhat succulent, hairless, shrub or small tree to 6 m high. **Leaves:** Green, thick and almost fleshy, lanceolate to broad-elliptic, apex pointed but not long-tapering, margins entire or obscurely toothed towards apex; up to 9 x 2.2 cm. **Flowers:** White, purple-spotted, 5–9 mm long, in axillary clusters, sepals overlapping with translucent membranous margins, late spring to early summer. **Fruits:** Purple to black, globose, smooth, ~ succulent drupes, 5–9 mm long. **Cultivated for:** Ornament, shade, shelter. **Invades:** Coastal areas, near habitation. **Origin:** W, S, SE Australia and Tasmania. **Poisonous.**



Myoporom laetum

New Zealand manatoka

SCROPHULARIACEAE

Description: Evergreen, somewhat succulent, hairless, wide-spreading shrub or tree to 12 m high; young shoots and leaves sticky. **Leaves:** Bright green, thick and almost fleshy, lanceolate, prominently dotted with translucent glands; usually finely toothed in upper 1/2; sometimes entire; juvenile leaves completely toothed; apex pointed but not tapering; up to 10 x 3.5 cm. **Flowers:** White, purple-spotted, 5–10 mm long, Jul–Apr. **Fruits:** Mauve, purple or reddish purple, ovoid, smooth drupes, 5–10 mm long. **Cultivated for:** Ornament, shade, shelter. **Invades:** Coastal areas near habitation. **Origin:** New Zealand. **Poisonous.**

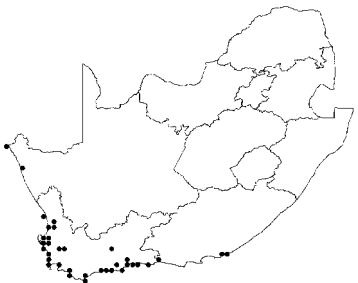


Myoporom montanum

manatoka

SCROPHULARIACEAE

Description: Evergreen, somewhat succulent, hairless, wide-spreading shrub or small tree 2–6 m high. **Leaves:** Dull green, thinly fleshy but firm, linear-lanceolate, tapering, margins entire, hairless, up to 10(–14) x 3.8 cm. **Flowers:** White, frequently purple-spotted, bell-shaped, 5–8 mm long, in small axillary clusters, Jul–Oct. **Fruits:** Light purple to reddish purple, globose, smooth, ~ succulent drupes, 6–8 mm long. **Cultivated for:** Ornament, shade, shelter. **Invades:** Coastal fynbos, riverbanks, valleys, coastal dunes. **Origin:** Australasia. **Poisonous. NB:** Previously identified as *M. tenuifolium* subsp. *montanum* in SA.





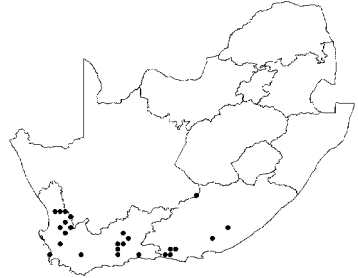
Trees & Shrubs Woody: leaves simple, long

Nerium oleander

oleander

APOCYNACEAE

Description: Multistemmed, evergreen shrub or small tree to 6 m high. **Leaves:** Dark dull-green, paler below, held erect, prominent midrib and numerous, parallel cross-veins. **Flowers:** Pink, red or white; invasive forms usually have pink, scantily aromatic flowers with a single row of petals, Sep–Mar. **Fruits:** Reddish brown follicles, 10–20 cm long, splitting longitudinally into 2 halves; seeds have tufts of hairs. **Cultivated for:** Ornament, screening. **Invades:** Rocky and gravelly watercourses in semi-arid mountain valleys. **Origin:** Mediterranean to SE Asia. **Irritant:** Skin (sap). **Poisonous:** Highly toxic and lethal.

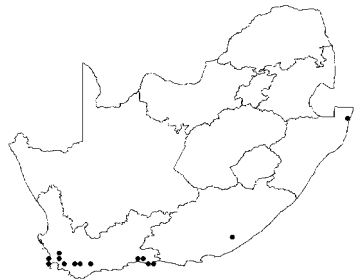


Pittosporum undulatum

Australian cheesewood

PITTOSPORACEAE

Description: Hairless, evergreen shrub or broadly conical tree to 12 m high. **Leaves:** Dark green, shiny (variegated cultivars with white or cream margins), oblong-lanceolate, tapering at both ends, rather thin, margins entire, usually wavy; to 15 cm long, often crowded at ends of branchlets. **Flowers:** White, to 13 mm long, fragrant, in terminal clusters (**A**), Aug–Sep. **Fruits:** Showy, 2-valved capsules, ~ globose, orange turning brown, to 13 mm across; seeds brown, in a sticky, resinous, orange pulp. **Cultivated for:** Ornament, hedging, shelter. **Invades:** Woodland, disturbed forest, riverbanks, plantations. **Origin:** E Australia.



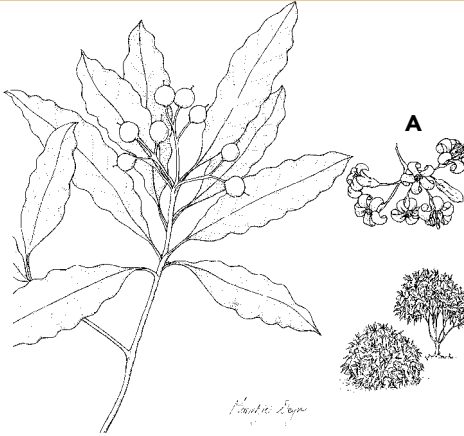
Rumex usambarensis

East African dock

POLYGONACEAE

Description: Shrub or straggling climber; stems to 3 m high or more. **Leaves:** Bright green, narrowly to broadly elliptic, with an arrow-shaped base, narrowed above the small basal lobes (5 x 2 mm); markedly 3-veined from the base (with short veins into the lobes), up to 5(–9) cm long. **Flowers:** Red to reddish brown; outer floral segments membranous; inner segments translucent, ~ circular and wing-like, 5–7 mm across; in whorls in a terminal, leafless inflorescence, spring–summer. **Fruits:** Shiny brown nuts, 3-angled. **Cultivated for:** Ornament, hedging. **Invades:** Rocky slopes, grassland, disturbed sites. **Origin:** E and C Africa.



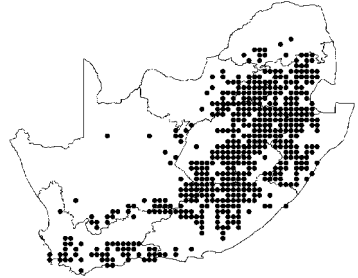


Salix babylonica

weeping willow

SALICACEAE

Description: Deciduous tree 5–15(–18) m high; branchlets slender, hanging vertically, almost to the ground. **Leaves:** Bright green above, pale or ~ grey beneath; spring leaves ~ silky (**A**); summer leaves (**B**) hairless, to 16 x 1.5 cm, finely toothed, ending in a long, tapering point. **Flowers:** Greenish (**C**), 1 mm long, almost without exception female only, stalkless, in catkins (**A**), ± 2 cm long, Aug–Oct. **Fruits:** Greenish, stalkless capsules (**D**) in catkins, shedding sterile white hairs; reproduces from detached branches. **Cultivated for:** Shade, ornament, fodder, erosion control; honey source.



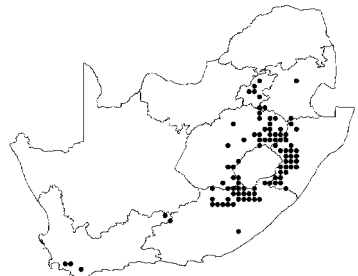
Invades: Watercourses. **Origin:** China. **NB:** Indigenous *S. mucronata*: branches may droop but not vertically; flowers and fruits stalked; leaves pale whitish-green beneath, without a whip-tip; branchlets often reddish.

Salix fragilis

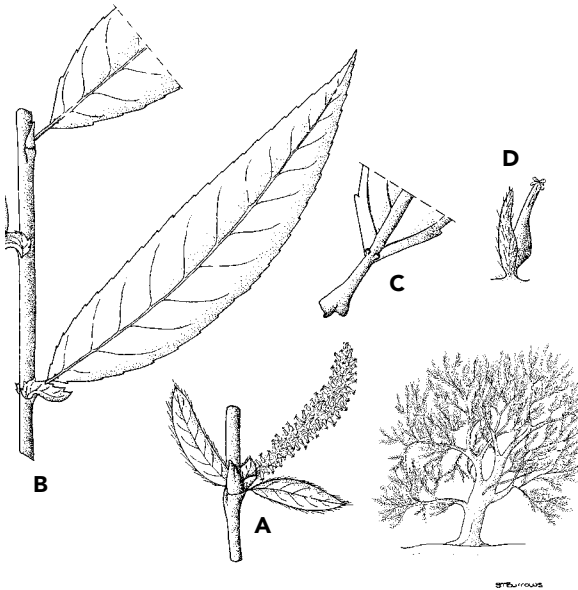
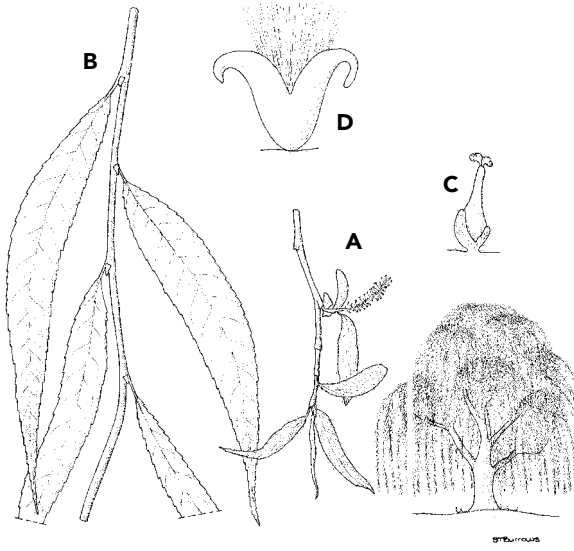
crack willow, brittle willow

SALICACEAE

Description: Deciduous tree 3–10(–15) m high; branchlets smooth, polished, ascending, brittle at the base, readily snapping off. **Leaves:** Bright green and shiny above, paler beneath with blue or grey bloom; spring leaves (**A**) fringed with long, silky hairs; summer leaves (**B**) hairless, to 15 x 4 cm; margins coarsely toothed; 2 glands at base of blade (C); stipules fairly large, half-heart-shaped, deciduous. **Flowers:** Greenish (**D**), 4 mm long, female only, shortly stalked, in dense, cylindrical catkins (**A**), 3–7 cm long, Sep–Oct.



Fruits: Greenish capsules, shortly stalked, shedding sterile white hairs; reproduces from detached branches. **Cultivated for:** Shade, ornament. **Invades:** Watercourses. **Origin:** W Europe, Asia. **NB:** Brittle branchlets distinctive.

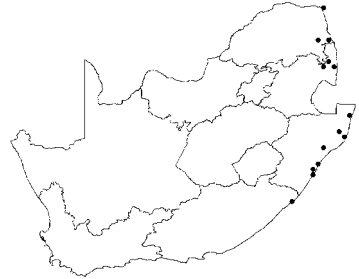


Syzygium cumini

jambolan

MYRTACEAE

Description: Evergreen tree 5–10 m high; branchlets white or grey. **Leaves:** Pale or yellowish green, glossy, thick, broadly oblong or oval, apex abruptly tapering, lateral veins close together, blade 8–15 cm long. **Flowers:** Greenish white (A), ± 8 mm across; stamens long and showy; in much-branched, many-flowered panicles, usually below the leaves, arising from old leaf scars (panicles terminal in the indigenous *S. guineense*), Oct–Apr. **Fruits:** Purplish red, 1-seeded berries (B), oval to pear-shaped, ± 2 cm long. **Cultivated for:** Ornament, edible fruits. **Invades:** Coastal bush, savanna, watercourses. **Origin:** Indomalaysia.

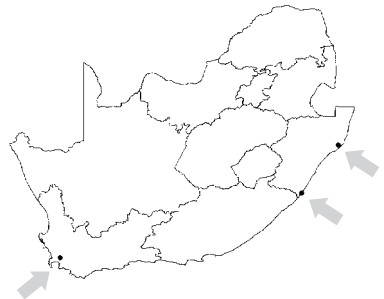


Syzygium jambos

rose apple

MYRTACEAE

Description: Evergreen tree 5–10 m high. **Leaves:** Dark green, glossy, thick, lanceolate, tapering, 13–20 cm long, stalk ± 5–8 mm long. **Flowers:** Greenish white (A), large, 5–8 cm across, stamens long and showy, petals free, in few-flowered, broad clusters, Aug–Mar. **Fruits:** Cream-yellow, tinged pink, few-seeded berries (B), round or oval, 2.5–5 cm long, rose fragrant. **Cultivated for:** Ornament, edible fruits. **Invades:** Coastal bush, watercourses. **Origin:** SE Asia.

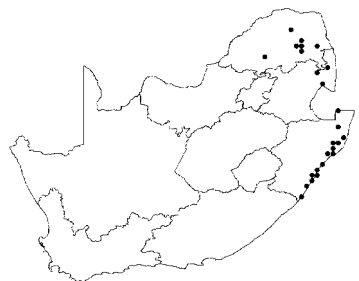


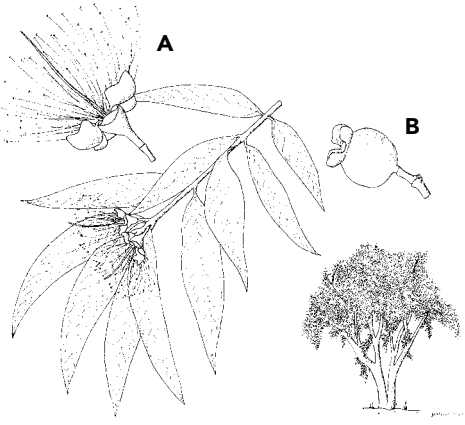
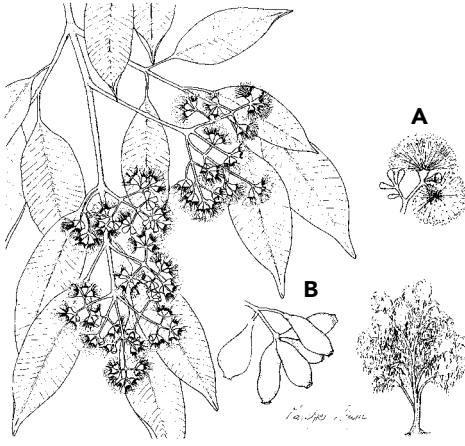
Thevetia peruviana (= *Cascabela thevetia*)

yellow oleander

APOCYNACEAE

Description: Evergreen shrub or small tree 2–6 m high with milky sap. **Leaves:** Bright green, glossy, narrow, lanceolate, to 15 cm long, midrib prominent. **Flowers:** Yellow or orange, trumpet-shaped, twisted in the bud, opening with 5 spreading and overlapping lobes, 5–7.5 x 5 cm, all year. **Fruits:** Slightly fleshy, green turning yellow and finally hard and black; ± 2.5 cm across, broadly triangular in outline, with a raised ridge across the middle (A). **Cultivated for:** Ornament. **Invades:** Savanna, watercourses, coastal bush. **Origin:** Mexico, W Indies. **Poisonous:** Whole plant, especially seed, highly toxic and lethal.





Acacia adunca

cascade wattle, Wallangarra wattle

FABACEAE

Description: Unarmed, evergreen, shrub or tree 2.5–14 m high; branchlets ~ rounded, without hairs. **Leaves:** Phyllodes, very narrow (1–3 mm wide), straight to slightly curved, with a prominent midvein; ending in very small, hooked tips. **Flowers:** Bright yellow, globular flowerheads, in clusters of 4–11 in leaf axils, Jun–Oct. **Fruits:** Brown pods, usually slightly curved, constricted between some seeds. **Cultivated for:** Shelter? **Invades:** Disturbed sites in Fynbos (WC: Stellenbosch). **Origin:** SE Australia. **NB:** Recent DNA sequencing has not confirmed the identity of this species in South Africa.



John Wilson

Fiona Impson

Acacia fimbriata

fringed wattle, Brisbane wattle

FABACEAE

Description: Unarmed, evergreen, shrub or small tree to 7 m high; branchlets angled or flattened towards tips; leaf margins and branchlets usually fringed with white hairs. **Leaves:** Phyllodes, very narrow (2–5 mm wide) with a prominent midvein, straight or slightly curved, 2–5 cm long; marginal gland towards base of phyllode. **Flowers:** Bright yellow, globular flowerheads, in clusters of 8–25 per axil, Jul–Nov. **Fruits:** Brown pods, straight to slightly curved, often constricted between seeds. **Cultivated for:** Ornament, shade. **Invades:** Disturbed sites in fynbos (EC: Grahamstown). **Origin:** E Australia. **NB:** Recent DNA sequencing has not confirmed the identity of this species in South Africa.



Philp Weyl

Acacia stricta

hop wattle

FABACEAE

Description: Unarmed, evergreen shrub or small tree 1–5 m high with a narrow crown and leaves held erect; often suckering; branchlets angled or flattened, the ridges distinct and resinous. **Leaves:** Phyllodes, dull green to grey-green, up to 14 x 1.5 cm, with prominent midvein and net-veining. **Flowers:** Pale yellow or whitish, globular, in groups of 2–4 in the leaf axils, Aug–Oct. **Fruits:** Light brown Pods, ~ straight, up to 10 cm long and 5 mm wide; seed stalk (aril) expanded at one end but does not encircle the seed. **Cultivated for:** Ornament?, soil stabilization? **Invades:** Roadsides, watercourses, gaps in plantations (WC). **Origin:** SE Australia.



Ardisia elliptica

shoebuttan ardisia

PRIMULACEAE

Description: Large, branching, evergreen, hairless shrub up to 4 m high; suckers from the roots and can form dense stands. **Leaves:** Pinkish at first, turning dark green, leathery, hairless, obovate or oblanceolate, margins entire, blades 6–12 x 1.5–4 cm. **Flowers:** Pink, white or mauve, star-shaped (5-petalled) in axillary umbels, sporadically through the year. **Fruits:** Red, turning dark purple to black, shiny, globose, 1-seeded drupes, 6–11 mm across, on long stalks, in drooping clusters. **Cultivated for:** Ornament. **Invades:** Urban areas (KZN: Durban); potentially invasive in moist forests, wetlands; shaded habitats. **Origin:** India to Japan and Phillipines.



Banksia integrifolia

coastal banksia

PROTEACEAE



Description: Evergreen tall shrub or small tree 6–16 m high with rough, grey bark. **Leaves:** Dull dark green above, silvery-white beneath, stiff, whorled, 5–20 cm long; mature leaves entire, juvenile leaves shorter and irregularly toothed. **Flowers:** Pale yellow, in spikes 7–14 cm long. **Fruits:** Woody follicles arranged on a cylindrical “cone”, 5–12 cm long; seeds winged, papery. **Cultivated for:** Ornament. **Invades:** Coastal fynbos (WC: Kleinmond, Pringle Bay). **Origin:** E Australia.



Buddleja davidii

Chinese sagewood, summer lilac

BUDDLEJACEAE



Description: Semi-evergreen, spreading shrub 1.5–3 m high; branches ~ 4-angled, white or greyish-downy when young. **Leaves:** Dark green and shiny above; white downy below; margins slightly toothed; blade lanceolate and 10–30 cm long; stalk 2–5 mm long. **Flowers:** White to lilac-purple, with orange-yellow throat; tubular, 8–14 mm long, in dense, terminal inflorescences 12–20 cm long; sweetly scented, summer–autumn. **Fruits:** Brown capsules 5–10 mm long, containing many tiny seeds. **Cultivated for:** Ornament and attracting butterflies. **Invades:** Urban areas, disturbed sites (WC: Cape Peninsula). **Origin:** China.



P Clarke, Wikimedia Commons, CC-BY-SA-3.0

Buddleja madagascariensis

Madagascar sagewood

BUDDLEJACEAE

Description: Semi-evergreen or evergreen, spreading shrub 1.5–4 m high; branches cylindrical, white or yellowish-downy, drying rusty brown.

Leaves: Dark green and shiny above; white or yellowish-downy below; margins entire; blade ovate, 4–15 cm long; stalk 1.5–2.5 cm long. **Flowers:** Yellow or orange, tubular, ± 1 cm long, in dense, terminal inflorescences to 25 cm long; sweetly scented, late winter to spring.

Fruits: Blue-violet globose berry ± 5 mm long. **Cultivated for:** Ornament and attracting butterflies. **Invasives:** Urban areas, streambanks (G, WC: Cape Peninsula). **Origin:** Madagascar.



Cotoneaster salicifolius

willow-leaved showberry

ROSACEAE

Description: Unarmed, evergreen shrub to 5 m high with showy, berry-like fruits; branches erect and spreading, initially densely felty, becoming hairless. **Leaves:** Dark green, shiny, wrinkled, hairless, with deeply impressed veins; lower surface grey felty, sometimes hairless by autumn; thick, elliptic-lanceolate, 3–10 cm long, stalks 5–8 mm long. **Flowers:** White, ± 6 mm across, in clusters of 30–100, stalks densely grey felty, calyx downy, spring–early summer. **Fruits:** Bright red, shiny pomes, with 3–5 nutlets. **Cultivated for:** Ornament, hedging; honey source. **Potentially invasive:** Grassland, forest margins, riverbanks, rocky outcrops. **Origin:** China.



Euphorbia leucocephala

white poinsettia

EUPHORBIACEAE



Description: Slender, deciduous shrub to 3 m high with a milky latex. **Leaves:** Light green, variable in shape, from ovate-lanceolate to oblanceolate, usually opposite or in whorls of 3 or more, 2.5–8 cm long, on long stalks. **Flowers:** White, very small, at the ends of the branches and surrounded by showy, white, leaf-like bracts ± 1 cm long; fragrant, May–Jul. **Fruits:** Capsules, smooth, ± 7 x 8 mm. **Cultivated for:** Ornament. **Invades:** Urban open space (KZN: Durban); potentially invasive in grassland and woodland. **Origin:** Mexico and C America. **Irritant:** Skin (sap).



Kunzea ericoides

burgan, white tea tree

MYRTACEAE



Description: Evergreen shrub or small tree up to 5 m high; bark grey and flaky. **Leaves:** Light green, narrowly elliptic, quite thick, soft, typically 4–12 x 1–2 mm, aromatic, apex pointed. **Flowers:** White, on stalks 3–6 mm long, crowded on leafy side branches or in leaf axils; petals 1.5–2.5 mm long; stamens 1–4 mm long, mostly longer than the petals; summer. **Fruits:** Capsules, small, on long stalks, soft; seed shed as soon as it is ripe. **Cultivated for:** Ornament. **Invades:** Streambanks, urban open space (WC: George). **Origin:** SE Australia, New Zealand. **NB:** *Leptospermum laevigatum* has solitary flowers, capsules on short stalks and stamens shorter than petals.



Photos: Kasey Voges

Melaleuca quinquenervia

broad-leaf paperbark

MYRTACEAE

Description: Evergreen tree 8–20 m high with soft, white, many-layered, peeling bark. **Leaves:** Grey-green, alternate, leathery, lanceolate to elliptic, 3–10 x 0.5–2.5 cm, with 5 prominent, longitudinal veins. **Flowers:** White or cream, in bottlebrush-like spikes mostly 2–5 cm long, autumn–winter. **Fruits:** Capsules, broad-cylindrical, 4–5 mm across. **Cultivated for:** Ornament, shelter. **Invades:** Watercourses, wetlands (KZN: Durban, WC: Tulbagh, Wolseley). **Origin:** Australasia.



Geoff Nichols

Pittosporum crassifolium

karo, stiff-leaved cheesewood

PITTOSPORACEAE

Description: Evergreen shrub or small tree to 9 m high. **Leaves:** Dark, glossy, grey-green above (variegated cultivars with white or cream margins), white felted beneath, leathery, elliptic to obovate, base tapering, 5–10 x 2.5 cm, margins thickened and slightly recurved. **Flowers:** Dark red-purple, to 12 mm long; solitary, in pairs or umbels of 5–10 flowers, fragrant, spring to summer. **Fruits:** Grey-downy capsules, usually 3-valved, to 3 cm long; seeds black in a sticky, golden-yellow pulp. **Cultivated for:** Ornament, hedging, shelter. **Potentially invasive:** Coastal woodland, riverbanks (WC: George). **Origin:** New Zealand.



Kasey Voges



Acacia podalyriifolia

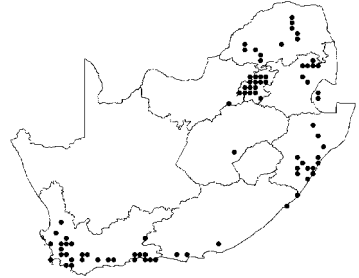
pearl acacia

FABACEAE

Description: Unarmed, evergreen shrub or small tree 3–6(–10) m high; branchlets and all new growth covered in a greyish, powdery bloom and densely velvety hairs.

Leaves: Phyllodes (**A**), silvery-grey to dull green, velvety, oval or elliptic, short, 2–4 cm long with a single midrib.

Flowers: Bright yellow, globular flowerheads in long, showy sprays, Jun–Aug. **Fruits:** Greyish brown, velvety pods (**B**), 3–8 cm long, 1.5–2 cm wide, margins often wavy. **Invades:** Roadsides, urban open spaces and other disturbed sites in grassland, savanna and fynbos; watercourses, plantations. **Origin:** E and SE Australia.



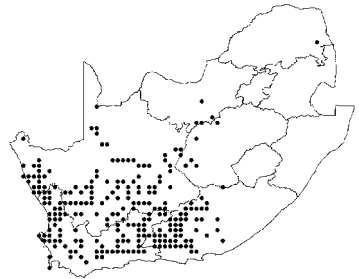
Atriplex nummularia

old man saltbush

AMARANTHACEAE

Description: Erect shrub 1–2(–3) m high with many creamy-white stems from the base. **Leaves:** Greyish or bluish green, scaly, blade about as long as broad, margin entire or toothed. **Flowers:** Greyish to yellowish, minute, in compact, terminal, drooping clusters, Sep–Jan(–all year). **Fruits:** Utricles (**A**), 5 mm across, grey-green turning pink or straw-coloured, papery or corky, 1-seeded. **Cultivated for:** Fodder.

Invades: Sandy riverbeds, coastal dunes, edges of pans, roadsides, in semi-arid regions. **Origin:** C and SE Australia.



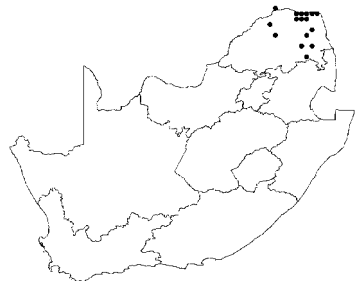
Calotropis procera

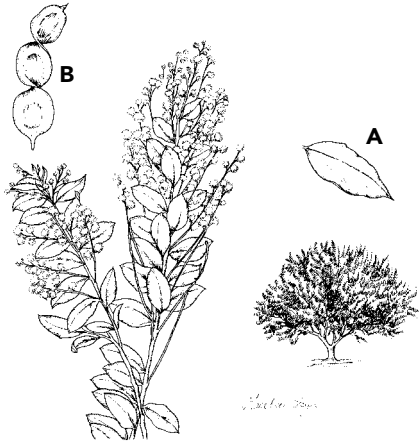
calotropis, giant milkweed

APOCYNACEAE

Description: Evergreen, softly woody shrub usually < 2 m high; young branches succulent; stems with milky latex. **Leaves:** Grey-green, veins white, slightly leathery, undersurface finely hairy, 5–22 x 2–15 cm, oblong to elliptic, almost stalkless. **Flowers:** White with corolla lobes purple-tipped, 1.5–2 cm across, in clusters of 3–10, spring–summer. **Fruits:** Green, inflated follicles, up to 13 x 7 cm (A); seeds brown, flat, with tufts of hairs. **Cultivated for:** Ornament, fibre, medicine.

Invades: Urban areas, roadsides, overgrazed land, watercourses, drainage lines. **Origin:** Tropical and N Africa, Asia. **Poisonous:** To livestock.







Celtis australis

nettle tree, European hackberry

CANNABACEAE

Description: Deciduous tree 10–25 m high with a smooth, grey trunk and dense, oval to rounded crown.

Leaves: Dark green, glossy, rough and hairless above; softly hairy and greyish green below. **Flowers:** Yellowish, small, axillary, spring. **Fruits:** Drupes, yellowish white becoming purple or black, globose, ± 1 cm across, on stalks 1.5–2.5 cm long. **Cultivated for:** Shade, ornament. **Invades:** Urban open spaces. **Origin:** Europe, N Africa, W Asia. **NB:** Indigenous *C. africana*: young leaves bright green and very hairy on both surfaces, becoming less so; adult leaves dull green; fruits yellow or brown, ± 4 mm across, on long, thin stalks.



Celtis occidentalis

common hackberry

CANNABACEAE

Description: Deciduous tree to 20 m high with a grey, furrowed trunk, becoming warty with age and spreading crown. **Leaves:** Bright green, slightly glossy and usually smooth above; paler and hairless, or hairy only on veins, beneath. **Flowers:** Yellowish, small, axillary, spring. **Fruits:** Drupes, yellow or orange-red turning purple or black, globose, ± 1 cm across, on stalks longer than leaf stalk (to 1.5 cm long); fruit tipped with a thick beak. **Cultivated for:** Shade, ornament. **Invades:** Urban open spaces. **Origin:** Canada, USA. **NB:** Compare with indigenous *C. africana* described under *C. australis*.



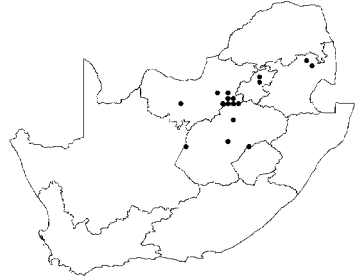
Sten, Wikimedia Commons, CC-BY-SA-3.0

Celtis sinensis

Chinese nettle tree

CANNABACEAE

Description: Deciduous to semi-deciduous tree 9–11 m high with a smooth, grey trunk and spreading, dark green crown. **Leaves:** Dark green, glossy, hairless above; softly hairy (when young) and greyish green below. **Flowers:** Yellowish, small, axillary, spring. **Fruits:** Drupes, green turning dark orange, globose, ± 6 mm across, on short, stout stalks ~ same length as stalk. **Cultivated for:** Shade, ornament. **Invades:** Urban open spaces, riverbanks. **Origin:** China, Korea, Japan. **NB:** Compare with indigenous *C. africana* described under *C. australis*.



Combined distribution of all naturalised *Celtis* species.



Geoff Nichols





Cestrum aurantiacum

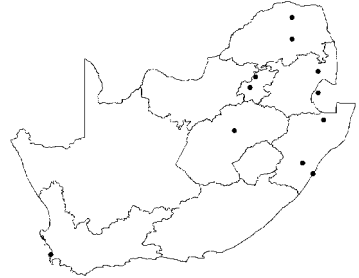
orange cestrum

SOLANACEAE

Description: Much-branched, mostly hairless, evergreen shrub 1–2(–6) m high, producing suckers; stems and leaves bruise easily, emitting an unpleasant smell.

Leaves: Light green, ovate, up to 13 x 7 cm. **Flowers:** Orange (rarely yellow), tubular, in axillary and terminal, ~ nodding clusters, Oct–May. **Fruits:** White, spongy berries, ± 1 cm long. **Cultivated for:** Ornament.

Invades: Forest margins, plantations, savanna, wooded kloofs. **Origin:** Mexico to Costa Rica. **Poisonous:** Whole plant toxic to mammals.



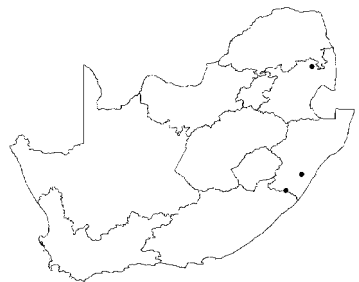
Cestrum elegans

crimson cestrum

SOLANACEAE

Description: Much-branched, evergreen shrub up to 4 m high; stems and leaves softly hairy and bruise easily, emitting an unpleasant smell. **Leaves:** Mid green, ovate to ovate-lanceolate, up to 12 x 4 cm. **Flowers:** Crimson, reddish purple or pink, tubular, constricted at the mouth, in axillary and terminal clusters, Oct–May.

Fruits: Red, spongy berries, ± 1 cm long. **Cultivated for:** Ornament. **Invades:** Forest margins, plantations, savanna, wooded kloofs. **Origin:** Mexico. **Poisonous:** Whole plant toxic to mammals. **NB:** Very similar to *C. fasciculatum* which has a more compact inflorescence and hairy calyx.



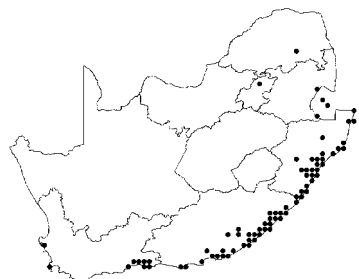
Cestrum laevigatum

inkberry

SOLANACEAE

Description: Sparsely hairy, evergreen shrub 1–2 m high or tree to 15 m; bruised leaves and stems emit an unpleasant smell. **Leaves:** Light or dark green, elliptic-lanceolate, up to 15 x 5 cm; stipules 0.4–2 cm long, deciduous. **Flowers:** Greenish yellow in axillary clusters towards ends of branches, Oct–May. **Fruits:** Green, turning purple-black, spongy berries, ± 1 cm long.

Cultivated for: Ornament, hedging. **Invades:** Forest margins, savanna, plantations, wooded kloofs, rivers, coastal dunes. **Origin:** Brazil, Argentina, Paraguay. **Poisonous:** Toxic to mammals; causing "Chase Valley Disease" in cattle. **NB:** *C. parqui* has narrower leaves, terminal and axillary inflorescences (see page 218).





Geoff Nichols

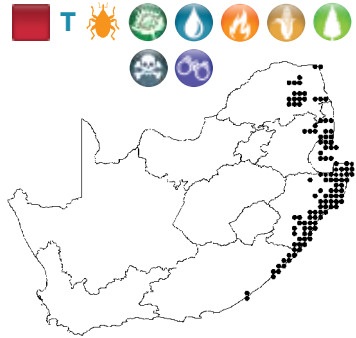


Chromolaena odorata

chromolaena, triffid weed

ASTERACEAE

Description: Scrambling, sparsely hairy shrub to 4 m or higher; often forming dense thickets; stems with opposite, wide-spreading branches. **Leaves:** Light green, often yellowish, ovate to triangular, 3-nerved from the base, glandular-dotted below, smelling strongly of turpentine or paraffin when crushed. **Flowers:** White or pale blue (**A**: one flower) in terminal, cylindrical heads 10 x 3 mm, surrounded by speckled bracts, Jun–Jul. **Fruits:** Bristly achenes (**B**) ± 5 mm long. **Invades:** Forest margins, savanna, coastal grassland, plantations, wooded kloofs, watercourses.



Origin: N, C and S America, W Indies; southern African form is native to either Jamaica or Cuba.

Poisonous: Leaves can be toxic to cattle. **NB:** Invasion dates back to the arrival of contaminated packing materials offloaded in Durban harbour during the Second World War.

Cinnamomum camphora

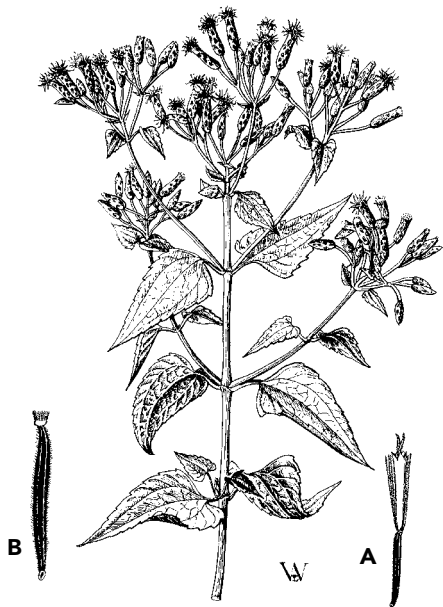
camphor tree

LAURACEAE

Description: Hairless, evergreen tree 10–26 m high; canopy dense, rounded to spreading; bark smooth, green, becoming rough, scaly and brownish grey; trunk becomes massive and spreading at the base. **Leaves:** Bright green, glossy, blue-grey beneath, reddish or coppery when young, camphor-scented when crushed, distinctly 3-veined from the base, apex tapering, buds enclosed by large, overlapping scales (A). **Flowers:** Yellowish or greenish white, minute, in delicate, axillary panicles, Sep–Nov. **Fruits:** Bluish black berries.



Cultivated for: Ornament, shade, timber; honey source. **Invades:** Forest margins, coastal bush, riverbanks. **Origin:** China, Taiwan and Japan. **Poisonous:** Fruits, in quantity.





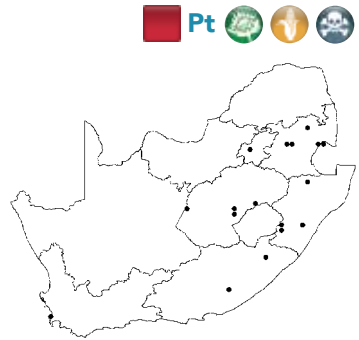
Cotoneaster franchetii

orange cotoneaster

ROSACEAE

Description: Unarmed, gracefully arching, semi-evergreen shrub up to 3 m high with showy, berry-like fruits; branchlets, lower surfaces of leaves, flower-stalks and calyces densely white-, grey- or yellowish-felty.

Leaves: Grey-green, hairy, becoming hairless and shiny above, 2–3 cm long, stalks 1–3 mm long; veins deeply impressed on upper surface. **Flowers:** Pinkish, about 1 cm across, in clusters of 5–15, Aug–Jan. **Fruits:** Orange-red pomes, usually with 3 seeds. **Cultivated for:** Ornament, hedging; honey source.



Invades: Grassland, forest margins, kloofs, riverbanks, rocky outcrops. **Origin:** W China. **Poisonous:** Fruits, in quantity.

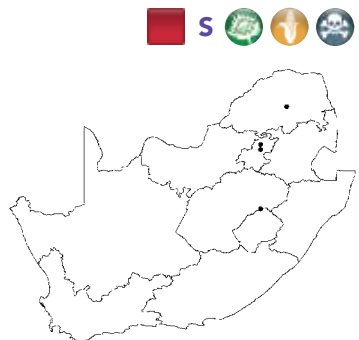
Cotoneaster glaucophyllus

late cotoneaster

ROSACEAE

Description: Unarmed, semi-evergreen shrub up to 4 m high with showy, berry-like fruits; branchlets and stalks initially densely yellow-felty, becoming hairless.

Leaves: Green and hairless above, initially with felty hairs on lower surface, becoming hairless and with a bloom (glaucous), ovate or elliptic, 3–8 cm long, stalks 5–10 mm long. **Flowers:** White, about 6 mm across, in clusters of 15–40, stalks with sparse downy hairs, calyx lobes hairless, spring–summer. **Fruits:** Orange pomes, with usually 2 seeds.



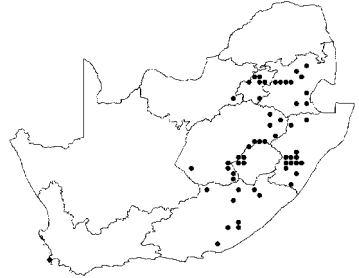
Cultivated for: Ornament, hedging; honey source. **Invades:** Grassland, woodland, riverbanks, rocky outcrops. **Origin:** S China, Vietnam. **Poisonous:** Fruits, in quantity.

Cotoneaster pannosus

silver-leaf cotoneaster

ROSACEAE

Description: Unarmed, gracefully arching, semi-evergreen shrub up to 3 m high with showy, berry-like fruits; branchlets, lower surfaces of leaves, flower-stalks and calyces densely white-felty. **Leaves:** Dull, greyish green, initially sparsely hairy, becoming hairless above, 1–3 cm long, stalks 2–7 mm long; midvein deeply impressed but lateral veins inconspicuous on upper surface. **Flowers:** White, about 1 cm across, in clusters of 6–12, Aug–Jan. **Fruits:** Dull, deep red pomes, with 2 seeds. **Cultivated for:** Ornament, hedging; honey source. **Invades:** Grassland, forest margins, kloofs, riverbanks, rocky outcrops. **Origin:** SW China. **Poisonous:** Fruits, in quantity.



Cotoneaster simonsii

Himalayan cotoneaster

ROSACEAE

Description: Unarmed, deciduous or semi-evergreen, erect shrub up to 4 m high with showy, berry-like fruits; branches wide-spreading; young stems covered with dense, brown, downy hairs, becoming hairless. **Leaves:** Shiny green with appressed hairs above and below, broadly ovate, apex acute to somewhat tapering, 1.5–3 cm long, crowded along the stem. **Flowers:** White to pale pink, in clusters of 2–5, spring. **Fruits:** Shiny red pomes, with 3 or 4 nutlets. **Cultivated for:** Ornament, hedging; honey source. **Potentially invasive:** Grassland, forest margins, riverbanks, rocky outcrops. **Origin:** Himalayas: India, Nepal, Bhutan. **Poisonous:** Fruits, in quantity.



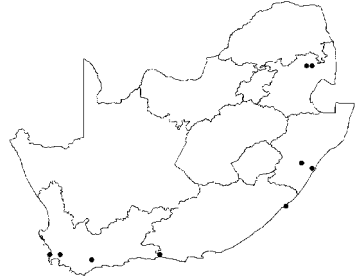


Eriobotrya japonica

loquat

ROSACEAE

Description: Evergreen tree to 8 m high, with stout branches and rusty, woolly-hairy branchlets. **Leaves:** Dark green and glossy above, rusty-hairy beneath, stiff, leathery, 12–25 cm long, with main veins ending in sharp teeth. **Flowers:** White, 5-petalled, 1–2 cm across, in woolly, terminal panicles measuring 10–16 cm long, May–Jun. **Fruits:** Orange-yellow, pear-shaped, fleshy pomes, 3.5–5 cm long, with a few large seeds. **Cultivated for:** Ornament, edible fruit. **Invades:** Forest, watercourses, roadsides. **Origin:** China, Japan. **NB:** Host for the fruit fly pest on apples, pears, peaches and plums.

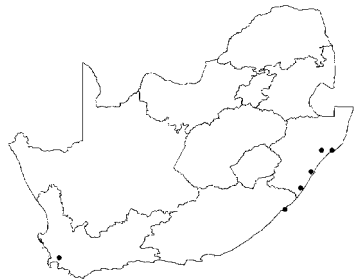


Eugenia uniflora

pitanga, Surinam cherry

MYRTACEAE

Description: Hairless, evergreen, broad, compact shrub or small tree 1–2(–7) m high. **Leaves:** Dark green and shiny above, with veins impressed; pale beneath, with veins raised; ovate to elliptic, apex tapering to a long point, to 5 cm long; nearly stalkless. **Flowers:** White (A), slightly fragrant, ± 12 mm across, solitary at ends of long, slender flowering-stalks, Jun–Jul. **Fruits:** Yellow, turning deep crimson when ripe, conspicuously 8-ribbed, to 3 cm across, edible, with a spicy flavour. **Cultivated for:** Ornament, hedging, edible fruit. **Invades:** Coastal bush and forest, riverbanks, urban open space. **Origin:** S America.

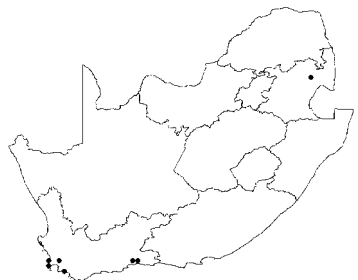


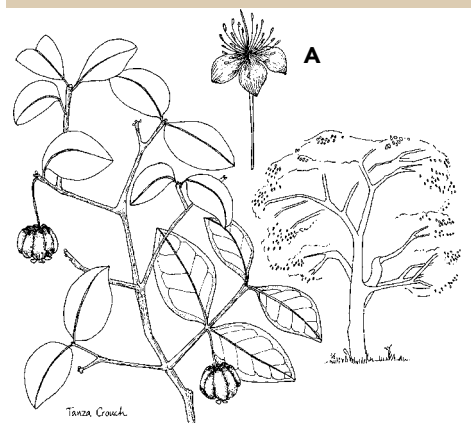
Homalanthus populifolius

bleeding-heart tree

EUPHORBIACEAE

Description: Hairless shrub or small tree to 8 m high with a milky latex; trunk straight, bark greyish brown, fairly smooth; branchlets thick, reddish or green. **Leaves:** Dark green above, pale greyish green beneath, often bright red in autumn; broadly ovate, 6–14 cm long, with a long-tapering apex; stalks up to 7 cm long. **Flowers:** Yellow-green to red, small, in terminal spikes 6–10 cm long, summer. **Fruits:** Purple, 2-lobed capsules to 1 cm long; seeds with a yellow, oily aril. **Cultivated for:** Ornament. **Invades:** Forests, plantations, streambanks, roadsides. **Origin:** Australasia. **Irritant:** Skin (latex). **Poisonous:** Latex.





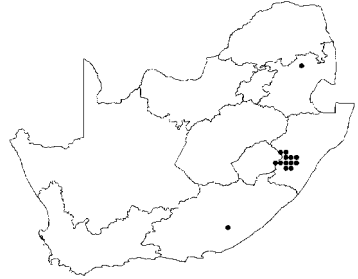


Hypericum pseudohenryi

Henry's St John's wort

HYPERICACEAE

Description: Shrub to 1.5 m high, branches arching to spreading; young stems red, 4-angled. **Leaves:** Bright green, ~ glaucous beneath, lacking net-veins, shortly stalked, 1.5–6 x 0.5–3 cm. **Flowers:** Golden yellow, styles free, outcurved towards apex; sepals often reddish, with transparent, toothed, minutely hairy margins; in terminal clusters, summer. **Fruits:** Ovoid capsules ± 10 mm long. **Cultivated for:** Ornament. **Invades:** Forest margins, streambanks. **Origin:** China. **NB:** Indigenous *H. roeperianum*: leaves net-veined, styles fused; *H. revolutum*: solitary flowers, narrower leaves (~ 5 mm) with recurved margins.

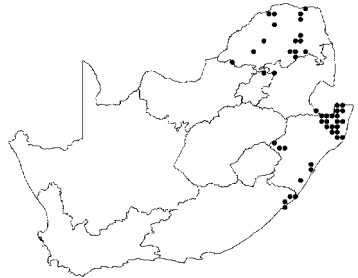


Ipomoea carnea subsp. *fistulosa*

morning-glory bush

CONVOLVULACEAE

Description: Erect or scrambling shrub to 3 m high; stems woody at the base, and hollow; tips herbaceous. **Leaves:** Dull green, shortly hairy, but sometimes becoming hairless, lanceolate to ovate, 10–25 cm long. **Flowers:** Deep pink to rose-purple, 5–9 cm long, in clusters at the branch tips, flowering all year. **Fruits:** Brown, dehiscent capsules, 2 x 1–1.5 cm, hairless; seeds covered with long, brown hairs. **Cultivated for:** Ornament, hedges, screens. **Invades:** Roadsides, riverbanks, ditches and edges of dams in savanna. **Origin:** Mexico, C and S America. **Poisonous:** Whole plant; lethal to goats.

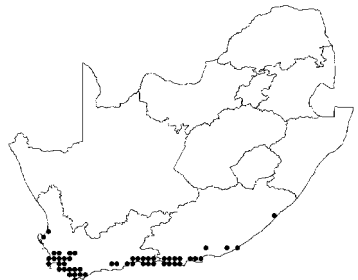


Leptospermum laevigatum

Australian myrtle

MYRTACEAE

Description: Large, densely branching, spreading shrub or tree to 8 m high; bark grey, old stems twisted and furrowed with bark flaking in thin strips. **Leaves:** Dull greyish green, leathery, 1.5–3 cm long, stalkless, tips rounded with a tiny point. **Flowers:** White, solitary, axillary, up to 2 cm across, Aug–Oct. **Fruits:** Grey, flat-topped, cup-shaped capsules, 7 x 8 mm, on short stalks, opening by 6–11 valves at the top; seeds small, winged and wingless. **Cultivated for:** Shelter, hedging, ornament. **Invades:** Forest clearings, mountain and lowland fynbos, on sandy soils. **Origin:** SE Australia, Tasmania.





Stefan Nesper

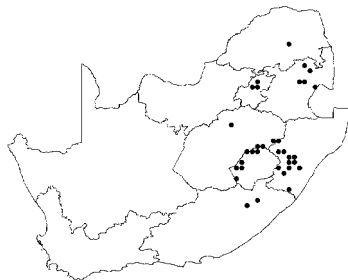


Ligustrum lucidum

Chinese wax-leaved privet

OLEACEAE

Description: Evergreen shrub or tree 3–10 m high with thick, leathery leaves; all parts hairless. **Leaves:** Dark green, sometimes variegated in green and yellow, glossy, hairless, 6–12 x 3–5 cm wide, ovate to narrowly oval, tapering at the base, long-pointed. **Flowers:** White, small, in terminal, pyramidal panicles (tighter than *L. japonicum*), 15–20 cm wide and high, heavily scented, Oct–Feb. **Fruits:** Shiny, black berries up to 1 cm long. **Cultivated for:** Hedging, ornament. **Invades:** Forest, woodland, watercourses.



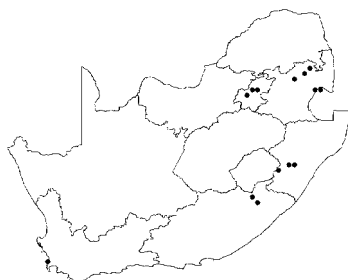
Origin: China, Korea.
Irritant: Respiratory tract (pollen).
Poisonous: Fruits, leaves.

Ligustrum sinense

Chinese privet

OLEACEAE

Description: Semi-evergreen or deciduous shrub 3–6 m high; shoots densely downy. **Leaves:** Mid green, downy on midrib beneath, ovate-elliptic, 2–6 x 1–3 cm wide. **Flowers:** White (**A**), small, stalked, corolla tube ~ as long as spreading lobes; in terminal, open, narrow, shortly hairy panicles 8–10 x 4–5 cm wide, heavily scented, Oct–Jan. **Fruits:** Shiny, black berries (**B**) ± 4 mm long. **Cultivated for:** Hedging, ornament. **Invades:** Forest, woodland, watercourses. **Origin:** China, Vietnam. **Irritant:** Respiratory tract (pollen).

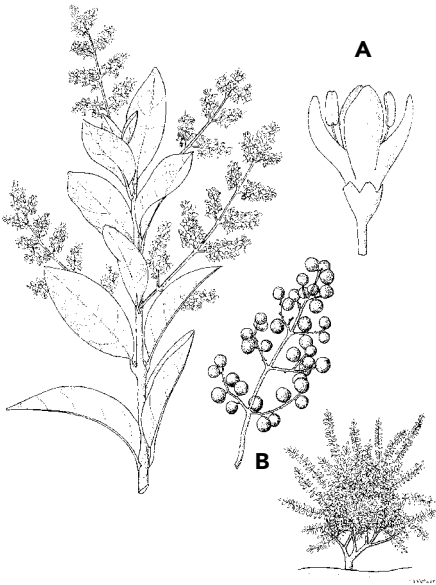


Poisonous: Fruits, leaves.

All *Ligustrum* species contain toxic glycosides that cause poisoning in humans and other mammals, and can be fatal in horses.



Geoff Nichols



Trees & Shrubs Woody: leaves simple, broad



Ligustrum japonicum

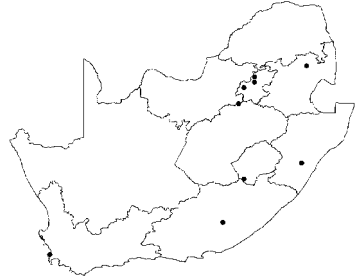
Japanese wax-leaved privet

OLEACEAE

Description: Evergreen shrub or small tree up to 3(–6) m high with thick, leathery leaves and minutely downy shoots. **Leaves:** Very dark green, glossy, hairless, 3–8 x 2–5 cm wide, ovate to ovate-oblong, usually rounded at the base and shortly tapering to rounded at the apex.

Flowers: White, small, in terminal, pyramidal panicles (looser than *L. lucidum*), 10–20 cm wide and high, heavily scented, Oct–Feb. **Fruits:** Shiny, black berries up to 1 cm long. **Cultivated for:** Hedging, ornament.

Invades: Forest, woodland, watercourses. **Origin:** Japan, Korea. **Irritant:** Respiratory tract (pollen). **Poisonous:** Fruits, leaves.



Ligustrum ovalifolium

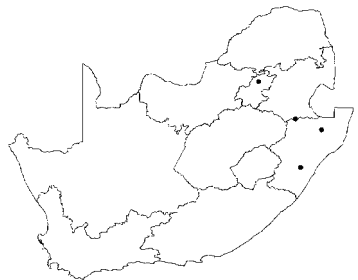
Californian privet

OLEACEAE

Description: Semi-evergreen or deciduous shrub 3–5 m high; all parts hairless. **Leaves:** Dark green and glossy above, yellowish green below, sometimes variegated with cream or yellow, hairless, ovate-elliptic, 2.5–8 x 1.5–3 cm wide. **Flowers:** White, small, nearly stalkless, corolla tube 2–3 times longer than spreading lobes;

in terminal panicles 5–10 cm wide and high, heavily scented (unpleasant or sweet), Oct–Feb. **Fruits:** Shiny, black berries ± 6 mm long. **Cultivated for:** Hedging, ornament. **Invades:** Forest, woodland, watercourses.

Origin: Japan, Korea. **Irritant:** Respiratory tract (pollen). **Poisonous:** Fruits, leaves.



Ligustrum vulgare

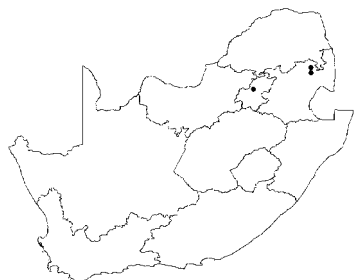
common privet

OLEACEAE

Description: Semi-evergreen or deciduous shrub 3–5 m high; shoots minutely downy. **Leaves:** Mid green, hairless, narrowly oval to lanceolate, 2.5–8 x 1–2 cm.

Flowers: White, small, stalked, corolla tube ~ as long as spreading lobes; in terminal panicles up to 5 cm long, heavily scented, Oct–Jan. **Fruits:** Shiny, black berries ± 6 mm long. **Cultivated for:** Hedging, ornament. **Invades:** Forest, woodland, watercourses.

Origin: Europe, N Africa, W Asia. **Irritant:** Respiratory tract (pollen). **Poisonous:** Fruits, leaves.



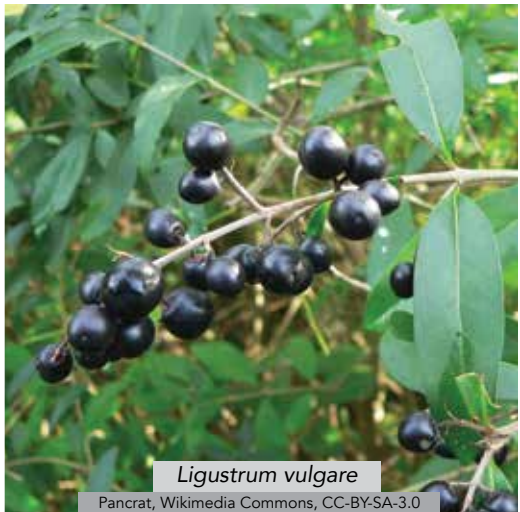
Key to *Ligustrum* species:

Leaves thick and leathery:

- leaves large (6–12 cm long), tapered at the base; long-tapering at the apex *L. lucidum*
- leaves smaller (3–8 cm long), rounded at the base; shortly-pointed or rounded at the apex *L. japonicum*

Leaves not thick and leathery:

- shoots densely downy, leaves hairy on midrib beneath *L. sinense*
- shoots minutely downy and leaves hairless
 - leaves narrowly ovate to lanceolate; inflorescence ~ as long as wide, flowers stalked, corolla tube ~ as long as the spreading lobes *L. vulgare*
 - shoots and leaves hairless
 - leaves ovate-elliptic; inflorescence length ~ twice the width, flowers stalkless, corolla tube 2–3x longer than spreading lobes *L. ovalifolium*



Trees & Shrubs Woody: leaves simple, broad

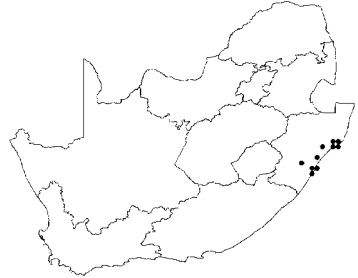


Litsea glutinosa

Indian laurel

LAURACEAE

Description: Evergreen tree 6–10 m high resembling avocado pear (*Persea americana*); young shoots and stalks velvety-hairy. **Leaves:** Green, hairless above, sparingly to velvety-hairy beneath, leathery, oblong with rounded or slightly pointed tips, 7–15 cm long, stalks 1–5 cm long. **Flowers:** Yellow-orange, in small, axillary umbels (as opposed to panicles in *Persea americana*), stamens exserted, 9–20 or more, Oct–May. **Fruits:** Black, shiny, 1-seeded berries, pea-sized, seated on a disc. **Cultivated for:** Ornament. **Invades:** Disturbed forest and forest margins. **Origin:** Tropical Asia (Himalayas, SE Asia).



Metrosideros excelsa

New Zealand Christmas tree

MYRTACEAE

Description: Evergreen, wide-spreading, low-branching tree, usually 5–6 m high but stunted 1–1.5 m in windy sites. **Leaves:** Young foliage bright green, hairless, with coppery-red tips and reddish stalks, turning glossy dark green above, white- or grey-felted beneath, thick and leathery, margins curled under, elliptic, oblong or oval, in opposite pairs. **Flowers:** Crimson, stamens long-exserted, in terminal, bottlebrush-like clusters, Dec–Jan. **Fruits:** White- or grey-velvety capsules \pm 1 cm long. **Cultivated for:** Ornament, shade, shelter; honey source. **Invades:** Coastal fynbos on moist, peaty soils. **Origin:** New Zealand. **NB:** 1a (Overstrand District).

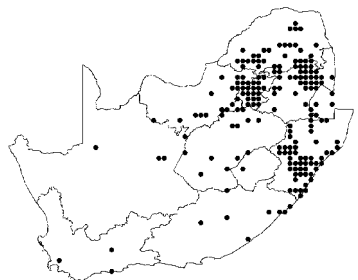


Morus alba

white mulberry, common mulberry

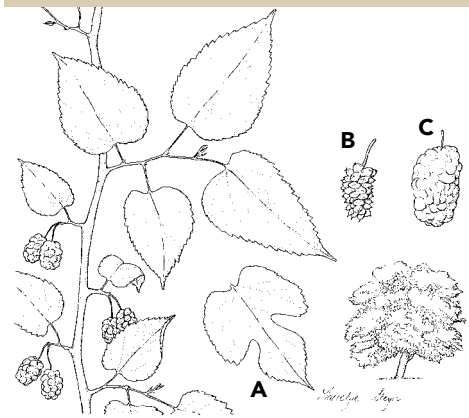
MORACEAE

Description: Deciduous tree with a dense, rounded canopy to 15 m high. **Leaves:** Light green turning yellow in autumn, thin, mostly glossy above, hairless or slightly hairy only on veins beneath, margins scalloped and often irregularly lobed (**A**); silkworm variety has very large, dull green leaves which are ~ rough above; leaf bases not deeply heart-shaped as in black mulberry (*M. nigra*). **Flowers:** Greenish, in small, cylindrical spikes (**B**), Aug–Oct. **Fruits:** White, purple or black, juicy syncarps (**C**) \pm 2 cm long. **Cultivated for:** Edible fruit. **Invades:** Savanna, grassland, riverbanks, urban open space. **Origin:** China.





Geoff Nichols



Geoff Nichols

Trees & Shrubs Woody: leaves simple, broad

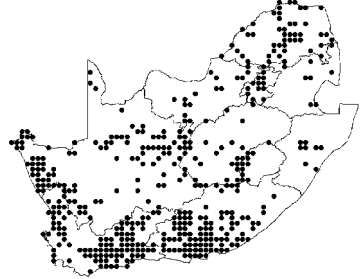


Nicotiana glauca

wild tobacco

SOLANACEAE

Description: Slender, evergreen shrub or small tree up to 6 m high; glaucous-green all over and sometimes with purplish tints; can form dense stands along riverbeds after floods. **Leaves:** Glaucous-green, leathery, on long stalks, blades up to 20 x 12 cm on young growth. **Flowers:** Yellow, tubular, 3–5 cm long, in terminal, drooping clusters, all year. **Fruits:** Brown, 4-valved capsules ± 1.5 cm long; seeds minute. **Cultivated for:** Ornament. **Invades:** Roadsides, road cuttings, wasteland, riverbanks, riverbeds. **Origin:** S Bolivia to N Argentina. **Poisonous:** Whole plant.

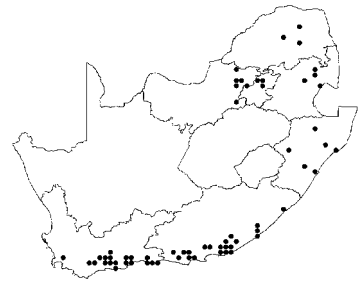


Phytolacca dioica

belhambra

PHYTOLACCACEAE

Description: Large, soft-wooded, semi-evergreen tree 12–20 m high, with a short, buttressed trunk and massively branched, rounded crown; root system massive and shallow; leaves and stems succulent. **Leaves:** Bright green, hairless, to 12 x 6 cm, on pinkish stalks to 7 cm long. **Flowers:** Creamy-yellow, small, in racemes 10 cm long; male and female flowers on separate trees, Sep–Dec. **Fruits:** Green turning black, succulent, berry-like, ± 1 cm across, pendent (A). **Cultivated for:** Shade, ornament; honey source. **Invades:** Savanna, fynbos, coastal bush, riverbanks, urban areas. **Origin:** S America. **Poisonous:** Root, fruit.

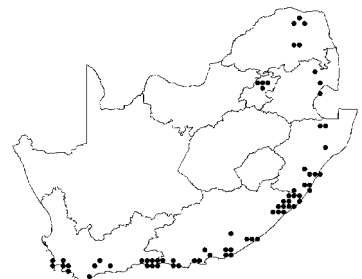


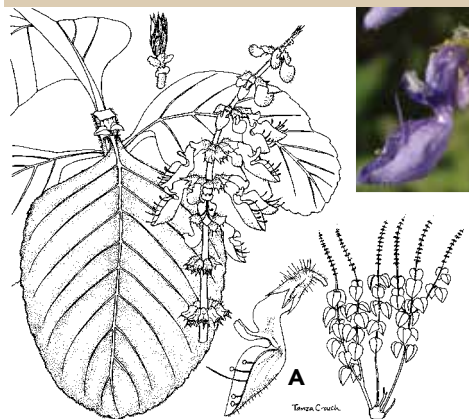
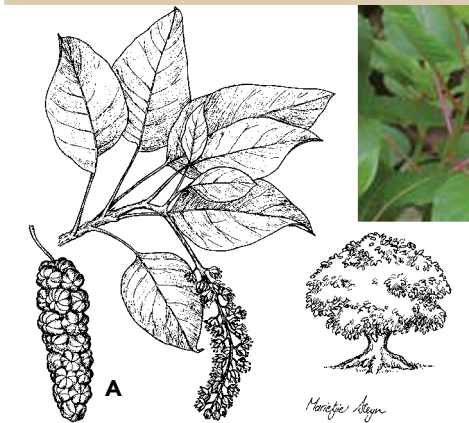
Plectranthus barbatus var. *grandis* (= *P. comosus*)

woolly plectranthus

LAMIACEAE

Description: Erect, soft shrub up to 3 m high from a woody base; stems and leaves densely woolly. **Leaves:** Light green, paler below, ovate to broadly elliptical, large, widest near base, usually more than 10 x 5 cm. **Flowers:** Blue or mauve (A), to 2.5 cm long, in a terminal, spike-like raceme 20–30 cm long, enclosed in large, overlapping bracts in the bud stage, elongating and drooping with age, Mar–Sep. **Fruits:** Small, black, shiny nutlets. **Cultivated for:** Ornament, hedging. **Invades:** Moist sites, watercourses, roadsides, rocky sites, forest margins. **Origin:** E Africa.





Geoff Nichols



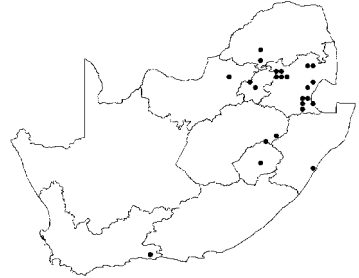
Populus alba

white poplar

SALICACEAE

Description: Deciduous tree 6–16(–25) m high; suckering freely; bark white or grey with horizontal dark lines (A), becoming rough and darker with age (B); buds and young twigs thickly white-woolly. **Leaves:** Dark green and shiny above, white- or grey-woolly beneath; leaves of sucker shoots and ends of long shoots (C): large, to 10 cm long, ~ triangular, 3–5 lobed or unevenly toothed; woolly beneath; leaves of short shoots (D): smaller, 3–5 cm long, ovate, more evenly-toothed, persistently woolly beneath. **Flowers:** Greenish-yellow catkins (female only) (E), ± 5 cm long, spring. **Fruits:** None. **Cultivated for:** Timber, shelter, ornament.

Invades: Riverbanks, vleis, dongas. **Origin:** Europe, N Africa, Asia.



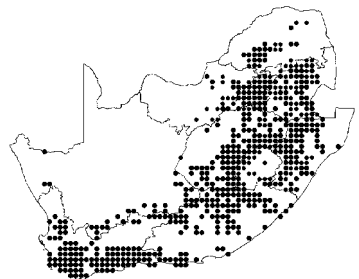
Populus x canescens

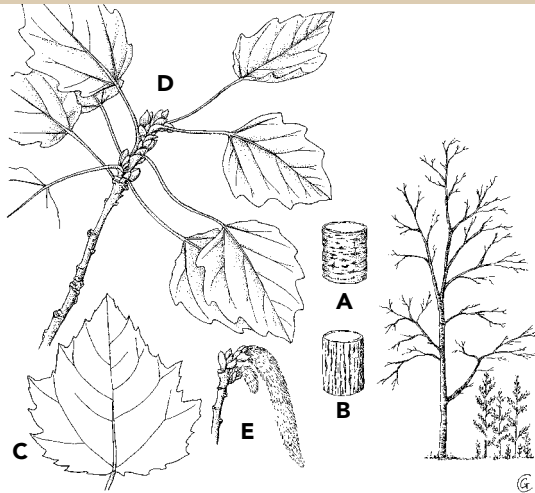
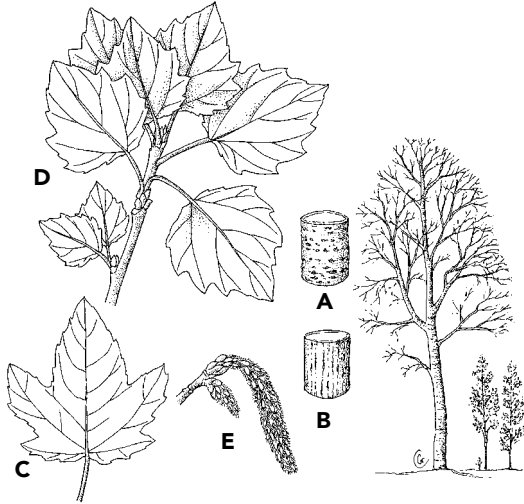
grey poplar

SALICACEAE

Description: Deciduous or semi-evergreen tree 10–20(–35) m high; suckering freely; bark white or grey with horizontal dark lines (A), becoming rough and darker with age (B); buds and twigs thinly downy. **Leaves:** Dark green and shiny above, grey or white-woolly to green and smooth beneath; leaves of sucker shoots and ends of long shoots (C): large, to 12 cm long, ~ triangular, ~ evenly toothed, not or shallowly lobed, woolly beneath; leaves of short shoots (D): smaller, 3–6 cm long, ovate, bluntly toothed, becoming almost hairless beneath.

Flowers: Reddish catkins (male only) (E), ± 6 cm long, spring. **Fruits:** None. **Cultivated for:** Timber, shelter, ornament, donga reclamation. **Invades:** Riverbanks, vleis, dongas. **Origin:** Europe, Asia.





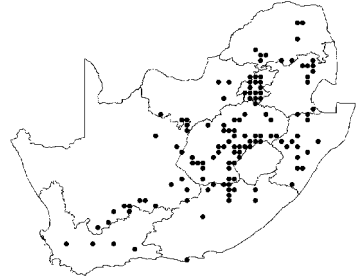


Populus deltoides

match poplar

SALICACEAE

Description: Deciduous, wide-spreading tree 15–35 m high; bark pale grey, slightly furrowed; shoots and stalks hairless. **Leaves:** Bright green, paler beneath, hairless, broadly ovate-triangular, pendulous, 8–20 cm long; margins coarsely toothed and fringed with hairs; gland always at junction of stalk and blade; yellow autumn tints. **Flowers:** Catkins, mostly male in subsp. *deltoides* (A), and female in subsp. *wislizeni* (main drawing); spring. **Fruits:** Capsules (B), in catkins; seeds held in white, woolly or cotton-like hairs. **Cultivated for:** Timber (especially for the match industry), firewood, shade, ornament; honey source. **Invades:** Riverbanks, marshes. **Origin:** N America.

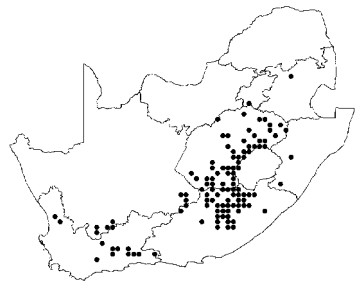


Populus nigra 'Italica'

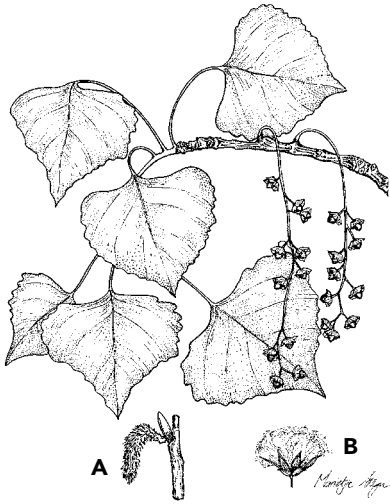
Lombardy poplar

SALICACEAE

Description: Deciduous or semi-evergreen (cv. *sempervirens*) tree 18–32 m high; habit narrowly columnar with erect branches; bark at first grey, smooth, becoming dark, rough and fissured; trunk buttressed; shoots and stalks hairless. **Leaves:** Bright green, paler beneath, 4–8 cm long, triangular (deltoid) to broadly diamond-shaped; stalks flattened, margins bluntly and often obscurely toothed; without glands at junction of blade and stalk; golden-yellow autumn tints.



Flowers: Catkins (A) (male only), spring. **Fruits:** None. Spreads by suckering from the roots. **Cultivated for:** Shelter, donga reclamation, ornament; honey source. **Invades:** Riverbanks. **Origin:** Europe, N Africa, W Asia.





Prunus serotina

black cherry

ROSACEAE

Description: Deciduous tree 15–30 m high; bark thin and striped when young, becoming dark grey or black, rough and peeling. **Leaves:** Bright green, shiny, oblong, 6–14 cm long, margin toothed; almond-scented when crushed. **Flowers:** White, with 5 petals and ~ 20 stamens, 1–1.5 cm across, fragrant, 10 or more in a narrow, cylindrical inflorescence, spring. **Fruits:** Drupes, green to red, turning black or dark purple when mature, ± 1 cm across. **Cultivated for:** Ornament, timber. **Invades:** Forest margins and gaps, plantations, urban open space. **Origin:** N and C America. **Poisonous:** Leaves, shoots, bark, seeds.

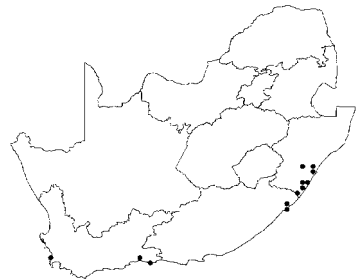


Psidium cattleianum

strawberry guava

MYRTACEAE

Description: Evergreen shrub or slender tree 1–3(–8) m high; branchlets cylindrical, smooth. **Leaves:** Dark green, hairless, shiny, thick and leathery, veins not conspicuously impressed, long-tapering at the base. **Flowers:** White (A), ± 1.5 cm across, solitary, Oct–Dec. **Fruits:** Purplish red berries (B), globose, cherry-sized, 2–3 cm long, flesh white, sweet. **Cultivated for:** Edible fruits, ornament. **Invades:** Moist, forested areas; subtropical savanna, plantations, wetlands. **Origin:** Brazil.



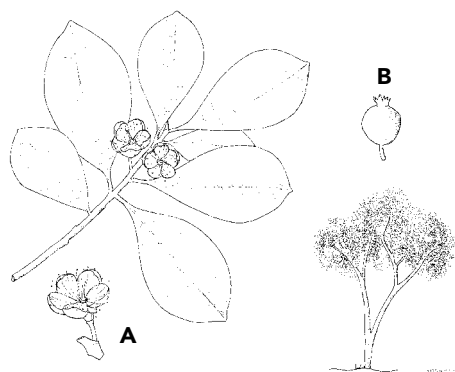
Psidium x durbanensis

Durban guava

MYRTACEAE

Description: Evergreen shrub or small tree to 7 m or higher, producing suckers; branchlets slightly angular and hairy. **Leaves:** Light green, thick, hairy below, ovate to oblong-elliptic, veins fewer and not as deeply impressed as in P. guajava. **Flowers:** White, in groups of 1–3, Oct–Dec. **Fruits:** Green turning pale yellow, ~ globose berries, smaller than those of P. guajava. **Invades:** Forest margins, savanna, roadsides, mainly around Durban. **Origin:** South Africa, possibly a hybrid between *P. guajava* and *P. guineense*.





Geoff Nichols



Geoff Nichols



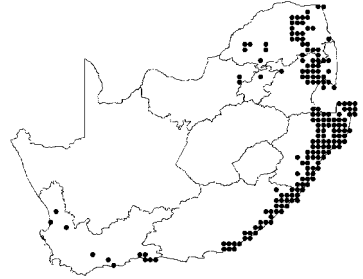
Psidium guajava

guava

MYRTACEAE

Description: Evergreen shrub or small tree 2–5(–10) m high; branchlets 4-angled, hairy. **Leaves:** Bronze turning light green, ovate to oblong-elliptic; often broad and rounded at both ends, with a small, pointed apex; thick, stiff, hairy below; veins impressed above and raised below. **Flowers:** White, in groups of 1–3, Oct–Dec.

Fruits: Many-seeded berries, green turning yellow, 2.5–10 cm long, with white, yellow or pink flesh, sweet, with musky, penetrating odour. **Cultivated for:** Edible fruits, shade. **Invades:** Forest margins, savanna, roadsides, watercourses. **Origin:** Mexico, C and S America, W Indies.



Psidium guajava invading western shores of Lake St Lucia

Psidium guineense

Brazilian guava

MYRTACEAE

Description: Evergreen, slender shrub or small tree to 6 m high; branchlets cylindrical or slightly flattened and hairy. **Leaves:** Light green, thick, coated beneath with pale or rusty hairs and distinctly dotted with glands, ovate to oblong-elliptic, veins fewer and not as deeply impressed as in *P. guajava*. **Flowers:** White, in groups of 1–3, Oct–Dec. **Fruits:** Green turning pale yellow, ~ globose berries, 2.5–3 cm long, smaller than those of *P. guajava*, tart or bitter, resinous. **Cultivated for:** Ornament, edible fruit, medicinal purposes. **Invades:** Forest margins, savanna, roadsides. **Origin:** Mexico, C and S America, W Indies.





Geoff Nichols



Richard Boon

Trees & Shrubs Woody: leaves simple, broad



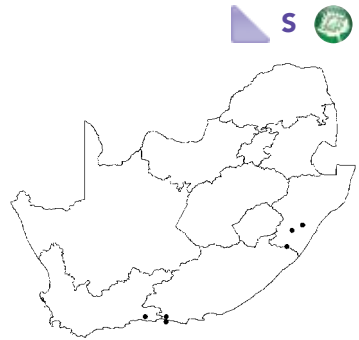
Solanum betaceum (= *Cyphomandra betacea*)
tree tomato

SOLANACEAE

Description: Unarmed, softly woody, evergreen shrub or small tree up to 6 m high. **Leaves:** Softly downy, papery, ovate, margins entire, blade 30–40 x 20–35 cm, base heart-shaped, apex pointed, stalk 15–25 cm long. **Flowers:** Pale pink or lavender, 1–2.5 cm wide, in loose clusters near branch tips, spring–summer.

Fruits: Berries, elliptic-ovoid, green turning purple, red, orange or yellow, often with darker longitudinal stripes, smooth, 5–10 cm long, pointed at both ends, long-stalked, pendent, borne singly or in clusters of 3–12.

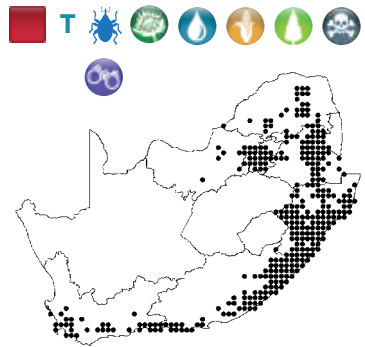
Cultivated for: Edible fruit. **Invades:** Forest margins and understories. **Origin:** S America.



Solanum mauritianum
bugweed

SOLANACEAE

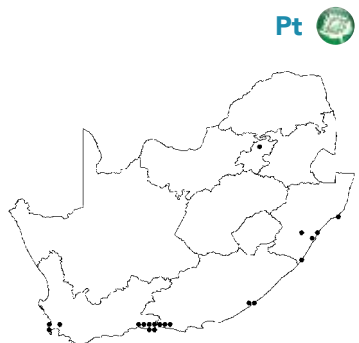
Description: Unarmed shrub or small tree 2–4(–10) m high; all parts except older stems covered with whitish-felty hairs. **Leaves:** Dull green and velvety above, white-felty beneath, to 25 x 10 cm; emit a strong smell when bruised; stipules ovate, to 2 cm long. **Flowers:** Purple, in compact terminal clusters, on densely felty stalks to 10 cm long, all year. **Fruits:** Globose berries 1 cm across, green turning yellow, in compact terminal clusters. **Cultivated for:** Ornament. **Invades:** Forest margins, plantations, savanna, watercourses, urban areas. **Origin:** S America. **Irritant:** Respiratory tract and skin (hairs). **Poisonous:** Unripe fruits.



Syzygium australe (= *Eugenia australis*) (*Syzygium paniculatum* misapplied)
Australian brush-cherry

MYRTACEAE

Description: Hairless, evergreen shrub or tree 3–6(–10) m high; leafy twigs 4-angled to shortly 4-winged, wings joining above each node to produce a small pocket (pockets absent in *S. paniculatum*). **Leaves:** Dark green, glossy, thick, oval to obovate, rounded to shortly pointed at the apex, 3–8 cm long. **Flowers:** Creamy-white, ± 2 cm across, Sep–Mar(–Jun). **Fruits:** Pinkish red berries, oval to nearly globular, ± 2 cm long, succulent, edible but insipid. **Cultivated for:** Ornament, edible fruit, hedges, screens. **Invades:** Forest margins, savanna, coastal bush, watercourses, urban areas. **Origin:** E Australia.





Geoff Nichols



Geoff Nichols



Trees & Shrubs Woody: leaves simple, broad



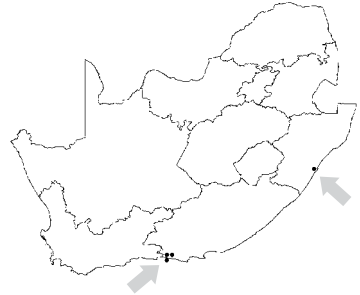
Tibouchina urvilleana

purple glory bush

MELASTOMATACEAE

Description: Sprawling shrub or small tree to 4 m high; young stems square, green, becoming pale brown.

Leaves: Dull green, soft and velvety, broadly ovate, apex pointed, base rounded, up to 14 x 7 cm, with 5 longitudinal veins, undersides densely covered with white hairs. **Flowers:** Deep purple, stamens dark, large, 6–10 cm across; petals 5, broad; in terminal panicles held above the foliage, summer–autumn. **Fruits:** Capsules. **Cultivated for:** Ornament. **Invades:** Forest and plantation edges, swamp forest and other moist sites. **Origin:** S Brazil.

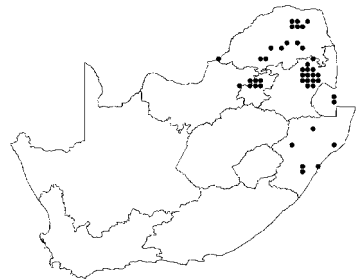


Tithonia rotundifolia

red sunflower

ASTERACEAE

Description: Bushy, slightly woody, annual 1.5–2(–3) m high. **Leaves:** Dark green, rough, hairy, to 15 x 10 cm, triangular-ovate, sometimes deeply 3-lobed (**A**), stalks winged. **Flowerheads:** Bright orange-red (**B**), large and showy, to 9 cm across, solitary on long stalks; buds pointed (**C**), bracts below petals in 2 series, narrow, pointed, Feb–Jul. **Fruits:** Brown achenes, in a rounded, spiky mass. **Cultivated for:** Ornament; source of honey. **Invades:** Roadsides, croplands, wasteland, riverbanks. **Origin:** Mexico and C America. **NB:** Don't confuse with *Zinnia peruviana*, a slender herb, to 60 cm high, and smaller flowers.



Triplaris americana

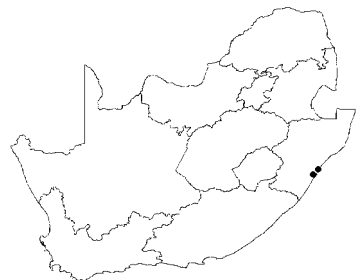
ant tree, triplaris

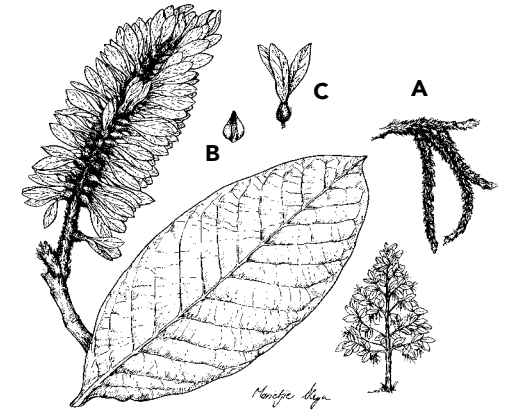
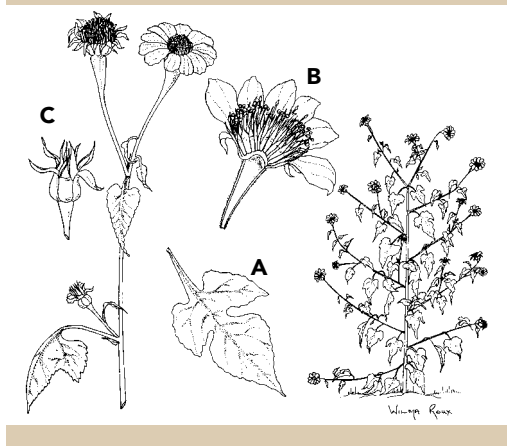
POLYGONACEAE

Description: Tree 8–10 m high with a smooth, grey trunk and pyramidal crown; stems hollow. **Leaves:** Bright green, ovate to oblong, 15–40 cm long, hairless, or brownish-velvety beneath on midrib and veins.

Flowers: Male and female on separate trees; small, borne in large panicles, along densely greyish yellow to brown-hairy axes up to 35 cm long; female flowers pink to reddish, male flowers inconspicuous on the hairy axes (**A**), Apr–May. **Fruits:** Shiny brown, sharply 3-angled achenes (**B**) with 3 pinkish red wings (**C**).

Cultivated for: Ornament. **Invades:** Forest, riverbanks. **Origin:** C and S America. **Poisonous:** Leaves.







Bartlettina sordida (= *Eupatorium atrorubens*, *E. sordidum*)
bartlettina

ASTERACEAE

Description: Evergreen, erect shrub to 2 m high; stems dark red with dense, felted hairs, becoming hairless. **Leaves:** Dark green, large, ovate, to 25 x 20 cm, paler beneath, densely hairy, prominent purple venation, margin coarsely toothed, stalks to 10 cm long. **Flowers:** Purplish pink fluffy flowerheads to 10 cm across, with long, exserted styles; rising above the foliage, Aug–Jan.

Fruits: Brown, 1-seeded achenes ringed with a tuft of bristles. **Cultivated for:** Ornament. **Potentially invasive:** Forest margins and clearings. **Origin:** Mexico and Guatemala.



Geoff Nichols



Clusia rosea

pitch-apple, autograph tree

CLUSIACEAE

Description: Evergreen shrub or tree up to about 10 m high; often growing as an epiphytic climber, sending down aerial roots which strangle the host plant; all parts contain a milky yellow-white latex.

Leaves: Dark green, leathery, obovate, in opposite pairs, 8–16 cm long.

Flowers: White, ageing to pink, opening at night, and fading to brown; up to 8 cm across with 6 to 8 rounded petals.

Fruits: Light green, rounded capsules, turning brown and splitting open to form a star-shape when ripe; seeds embedded in orange-red flesh. **Cultivated for:** Ornament. **Invades:** Coastal forest and grassland (KZN). **Origin:** Tropical America. **Poisonous:** Sap, fruits.



Photos: Michael Cheek



Hypericum androsaemum

tutsan

HYPERICACEAE

Description: Small, erect, semi-evergreen shrub to 1 m high; branching from the base; stem with 2 raised lines.

Leaves: Green (sometimes yellow or variegated), relatively large and broad, 4–15 x 3–8 cm, with rounded tips, opposite, stalkless, sometimes stem-clasping, net-veining prominent on both sides, translucent glands beneath.

Flowers: Golden yellow, \pm 2 cm across; sepals and petals ~ equal (6–15 mm long); styles short (2–2.5 mm); sepals persistent, in terminal few-flowered clusters, summer–autumn.

Fruits: Red turning black when ripe, fleshy berries.

Cultivated for: Ornament. **Potentially invasive:** Forest margins, streambanks.

Origin: Europe, N Africa, Asia. **Irritant:** Skin (sap). **Poisonous:** Whole plant, causing photosensitivity.



RG & FJ Richardson

Melaleuca hypericifolia

red-flowering tea tree

MYRTACEAE

Description: Shrub or small tree up to 5 m high with long, arching or drooping branchlets; bark corky to ~ papery.

Leaves: Green, hairless, decussate (in opposite pairs at right angles to those above and below), lanceolate to oblong-elliptic, 1–4 cm long, 4–10 mm wide.

Flowers: Red, in axillary bottlebrush inflorescences 3–5 cm long; stamens fused into bundles more than 2 cm long;

Nov–Jan. **Fruits:** Capsules, to 1 cm across, in dense spikes; sepals persistent and erect. **Cultivated for:** Ornament.

Invades: Fynbos, roadsides, around habitation (WC: Cape Peninsula). **Origin:** SE Australia.



Red E Pt



Paulownia tomentosa

empress tree, princess tree

PAULOWNIACEAE

Description: Deciduous tree 10–25 m high with a broad crown; bark grey-brown; twigs with conspicuous lenticels, and sticky glands when young; suckers from the roots. **Leaves:** Bright green, heart-shaped, simple, sometimes shallowly lobed, ± 40 x 30 cm, hairy above, in opposite pairs or whorls of 3 when young. **Flowers:** Purple or bluish, tubular, 5–7 cm long, calyx rusty-hairy; in conical inflorescences ± 50 cm long; inflorescence stalk 1–2 cm long, early spring. **Fruits:** Capsules, ovoid, 3–4 cm long, with sticky glands, calyx persistent; seeds winged. **Cultivated for:** Ornament, timber. **Potentially invasive:** Streambanks, forest margins. **Origin:** China. **NB:** Looks like a jacaranda when flowering.



Michael Cheek

Reynoutria sachalinensis (= *Fallopia sachalinensis*)

giant knotweed

POLYGONACEAE

Description: Semi-woody perennial with robust, annual stems 2–4 m high, dying back to a vigorous underground rhizome; stems are hollow, jointed and swollen at nodes, becoming woody with age, bamboo-like in appearance. **Leaves:** Light green, ovate-oblong, up to 40 x 25 cm wide, with somewhat heart-shaped base and wavy margin. **Flowers:** Greenish, usually in clusters of 4–7, in dense, axillary panicles 3–8 cm long, late summer–early autumn. **Fruits:** Brown nuts, 4–5 mm long enclosed by 3-angled, papery sheaths. **Cultivated for:** Ornament. **Potentially invasive:** Streambanks in moist, cool regions. **Origin:** Japan.



Petr Pyšek

Ulmus parvifolia

Chinese elm

ULMACEAE



Description: Deciduous tree 9–15(–25) m high with an open, rounded crown and ~ smooth, olive green to grey bark shedding in irregular, tan to orange plates. **Leaves:** Bright to dark green and waxily glossy above, paler beneath and slightly hairy when young, firm or thick, elliptic-ovate, base oblique, 2–4 cm long; margins usually with simple, blunt serrations. **Flowers:** Small, in axillary clusters, late summer. **Fruits:** Brown, winged nutlets (samaras), oval, about 1 cm long, autumn. **Cultivated for:** Ornament, shade. **Invades:** Watercourses, roadsides (G, FS, M, EC). **Origin:** China, Korea, Japan. **NB:** English elm, *U. procera*, has larger, non-glossy, doubly toothed leaves.



Wigandia urens var. *caracasana*

wigandia

BORAGINACEAE



Description: Sparsely branching, large-leaved, evergreen shrub to 3(–8) m high with yellow or rusty hairs on stems and leaves; produces suckers. **Leaves:** Dark to yellowish green, broadly ovate, apex rounded, with yellow or rusty stinging hairs beneath; up to 60 cm long, margin irregularly toothed, on long stalks up to 10 cm. **Flowers:** Violet or blue, 5-lobed, to 3 cm across, in large, terminal clusters, spring–autumn. **Fruits:** Dark brown capsules, 2-valved, splitting longitudinally. **Cultivated for:** Ornament. **Invades:** Roadsides, urban areas (G, L, KZN, WC). **Origin:** Mexico, C and S America. **Irritant:** Skin (stinging hairs). **Poisonous.**



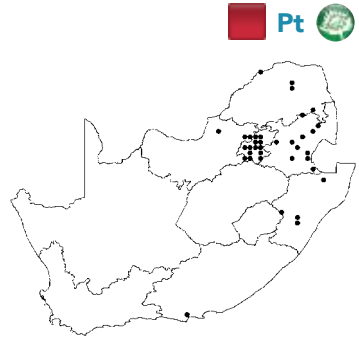


Crotalaria agatiflora

canarybird bush, bird flower

FABACEAE

Description: Evergreen shrub or small tree up to 3 m high; mostly hairless, young shoots softly hairy. **Leaves:** Greyish green, 3-foliolate; leaflets on a short stalk, elliptic-ovate, 4–7 x 2–5 cm; stalk longer than leaflets. **Flowers:** Greenish yellow, keel ± 3–5 cm long with a projecting greenish or purple beak, calyx often tinged purple, in many-flowered racemes to 40 cm long, spring–autumn. **Fruits:** Greenish purple pods, inflated, to 10 cm long. **Cultivated for:** Ornament. **Invades:** Roadsides, watercourses in grassland and savanna biomes; potentially invasive on forest margins. **Origin:** Kenya, Tanzania.

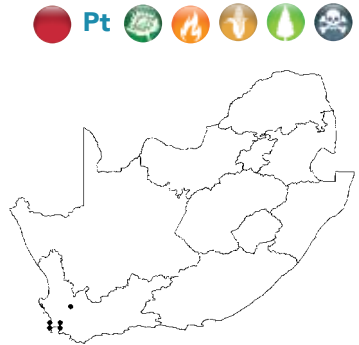


Genista monspessulana

Montpellier broom

FABACEAE

Description: Unarmed shrub 1–3 m high with slender, erect, very leafy green branches, evergreen in mild winters, branchlets ridged and hairy when young; sprouts from the root crown after fire. **Leaves:** Dull greyish green, hairy beneath, 3-foliolate, shortly stalked, to 2 cm long. **Flowers:** Bright yellow, 13 mm long, in short racemes of 3–9 flowers, at tips of lateral branchlets, Aug–Jan. **Fruits:** Rusty brown pods, 1–2 cm long, covered with silky hairs. **Cultivated for:** Ornament. **Invades:** Fynbos, forest margins, plantations, roadsides. **Origin:** Europe, N Africa, W Asia. **Poisonous:** Toxic to humans, livestock and horses.



Schefflera actinophylla

Queensland umbrella tree

ARALIACEAE

Description: Evergreen, single or multistemmed tree to 15 m high; often epiphytic on rocks or trees; aerial roots eventually strangle the host plant. **Leaves:** Glossy green, palmately compound with 7–16 oblong or elliptic leaflets, 20–30 x 10–20 cm, margins entire, wavy. **Flowers:** Red, small, crowded along elongated radiating spikes 40–90 cm long, which stand out above the foliage, late summer–autumn. **Fruits:** Purplish red, ribbed berries (drupes), ~ round, ± 5 mm across. **Cultivated for:** Ornament. **Invades:** Urban areas, forest margins, streambanks. **Origin:** N Australia, New Guinea. **Irritant:** Skin, respiratory tract (sap).





SANBI ISP WC



Trees & Shrubs Woody: leaves trifoliolate or palmate



Schefflera arboricola

dwarf umbrella tree

ARALIACEAE

Description: Evergreen, shrub or tree to 5 m high; often epiphytic on rocks or trees, sending down aerial roots which strangle the host plant. **Leaves:** Glossy green, sometimes variegated yellow, palmately compound with 7–11 obovate to oblong or elliptic leaflets, 6–10 cm long, 1.5–3.5 cm wide, margins entire. **Flowers:** Yellowish to green, in branched, terminal clusters, spring–summer. **Fruits:** Golden berries (drupes), ~ round, ± 5 mm across. **Cultivated for:** Ornament; popular indoor potted plant. **Invades:** Sites around habitation, forest margins, streambanks, roadsides. **Origin:** Taiwan. **Irritant:** Skin (leaves).

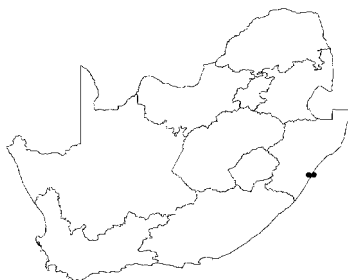


Schefflera elegantissima

false aralia

ARALIACEAE

Description: Evergreen shrub or tree to 8 m high; single- or multistemmed; often epiphytic on rocks or trees. **Leaves:** Coppery red becoming glossy dark green, palmately compound; leaflets 7–11, initially long, narrow, deeply toothed, becoming wider, more broadly-toothed to entire, 23–28 cm long. **Flowers:** White or pale green, small, in branched, terminal clusters, summer. **Fruits:** Brown or black berries (drupes), ~ round, ± 5 mm across, in terminal clusters. **Cultivated for:** Ornament; potted plant. **Invades:** Urban areas, forest margins, streambanks. **Origin:** SW Pacific. **Irritant:** Skin (leaves).

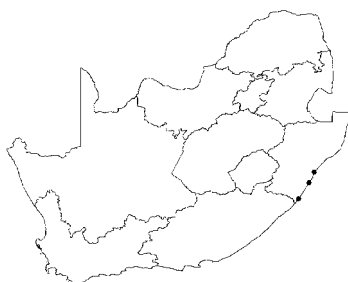


Vitex trifolia

Indian three-leaf vitex

LAMIACEAE

Description: Shrub or small tree to 8 m high with a smooth, light grey to brown bark; branchlets with short, dense hairs. **Leaves:** Green and hairless above, densely grey-hairy below, (1)–3(–5) foliolate; leaves variegated or purple in some cultivars; stalk 1–3 cm long; leaflets stalkless, central or single leaflet 2.5–9 cm long. **Flowers:** Purple to blue, scaly white outside, corolla tube 6–10 mm long with 5 lobes, in panicles 3–15 cm long, summer–autumn. **Fruits:** Black, ~ round, drupes, ± 5 mm across. **Cultivated for:** Ornament. **Invades:** Coastal bush, roadsides. **Origin:** Asia to Australia.





Photos: Geoff Nichols



Trees & Shrubs Woody: leaves pinnate

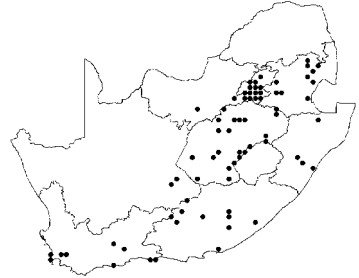


Ailanthus altissima

tree of heaven, stinktree

SIMAROUBACEAE

Description: Deciduous tree 8–25 m high with ~ rounded crown; branchlets robust, ascending; male flowers bad-smelling; suckers profusely. **Leaves:** Dark green with yellowish autumn tints, 0.3–1 m long; leaflets with 1–4 large, basal, gland-bearing teeth (A). **Flowers:** Greenish yellow (B), ± 3 mm long, in terminal sprays, Oct–Nov. **Fruits:** Winged nutlets (samaras) (C), ± 4.5 cm long, green turning reddish orange. **Cultivated for:** Ornament, shelter. **Invades:** Forest margins, grassland, riverbanks. **Origin:** China. **Irritant:** Skin, respiratory tract (leaves, bark, pollen). **Poisonous:** Leaves, flowers.

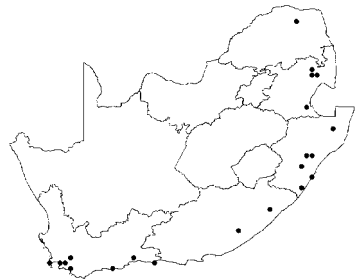


Sambucus canadensis

Canadian elder

ADOXACEAE

Description: Deciduous shrub to 3 m or more high with a spreading crown; branchlets strongly lenticellate; suckers. **Leaves:** Bright green, leaflets 5–9, usually with 7 leaflets, ± 10 x 5 cm, elliptic to lanceolate, with toothed margins. **Flowers:** White, 5–6 mm across, ovary with 3–5 cells; in broad umbel-like sprays, to 25 cm across, fragrant, early summer. **Fruits:** Ruby-red turning black, berry-like drupes, 3–5 mm across. **Cultivated for:** Ornament, edible fruit. **Invades:** Streambanks and wetlands. **Origin:** N and C America. **Poisonous:** All parts except flowers and ripe fruits; toxic to mammals.

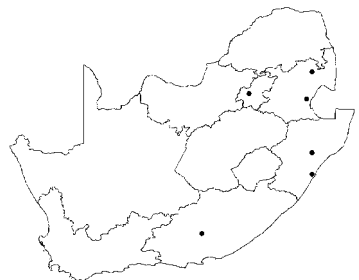


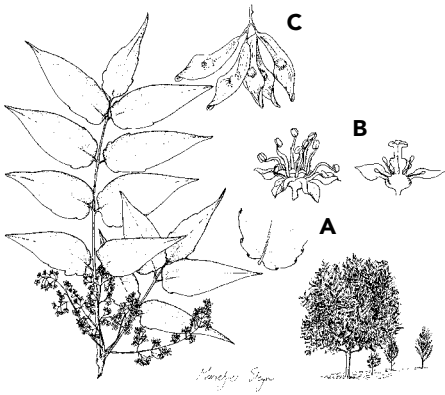
Sambucus nigra

European elder

ADOXACEAE

Description: Deciduous shrub or small tree 4–6 m high; branchlets slightly lenticellate; suckers freely. **Leaves:** Dark green, leaflets 5–9, usually with 5 leaflets, to 12 x 5 cm, elliptic, with toothed margins. **Flowers:** Yellowish white, 5–6 mm across, ovary with 3, rarely 4 cells; in broad umbel-like sprays, to 20 cm across, fragrant, late spring to mid-summer. **Fruits:** Dingy purple, turning black, berry-like drupes, 3–5 mm across. **Cultivated for:** Ornament, edible fruit. **Invades:** Streambanks and wetlands. **Origin:** Europe, N Africa, W Asia. **Poisonous:** All parts except flowers and ripe fruits; toxic to mammals.





Peter Meininger

Trees & Shrubs Woody: leaves pinnate

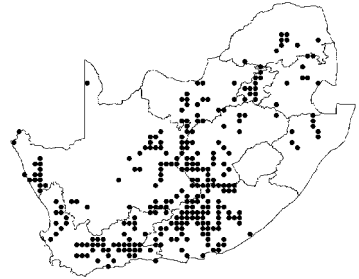


Schinus molle

pepper tree

ANACARDIACEAE

Description: Evergreen tree 8–15(–20) m high with graceful, hanging branches and foliage; leaves and fruits peppery-scented when crushed. **Leaves:** Downy when young, greyish or light green, with up to 37 narrowly lanceolate leaflets, margins ~ entire to toothed, rachis slightly winged. **Flowers:** Creamy-white, \pm 2 mm long, male and female (**A**) flowers on separate trees; in terminal and axillary clusters, Sep–Mar. **Fruits:** Rosy-pink, slightly fleshy, one-seeded, globose drupes.



Cultivated for: Ornament, shade; provides honey. **Invades:** Grassland, savanna, karoo, wasteland, watercourses. **Origin:** S America. **Irritant:** Skin, respiratory tract (sap). **Poisonous:** Fruit, in quantity.

Schinus terebinthifolia

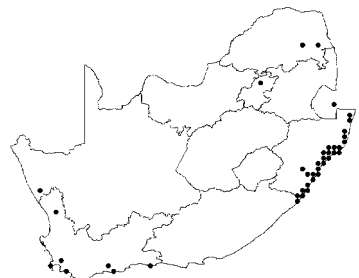
Brazilian pepper tree

ANACARDIACEAE

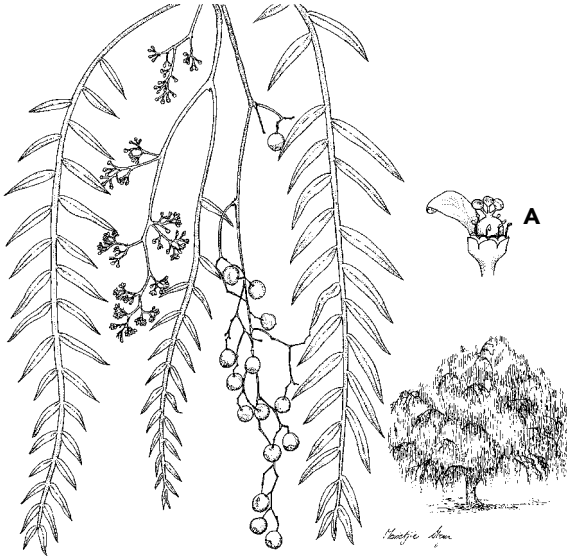
Description: Evergreen shrub or tree 3–6(–15) m high, with wide-spreading, horizontal branches. **Leaves:** Dark green with prominent, pale veins above, paler below, hairless; leaflets 5–13, but usually 7, oblong, rounded or bluntly pointed, sometimes toothed; rachis distinctly winged. **Flowers:** Creamy-white, very small, male and female flowers on separate trees, in tightly branched, terminal and axillary clusters, Sep–Mar. **Fruits:** Pink to bright red, slightly fleshy, one-seeded, globose drupes.



Geoff Nichols



Cultivated for: Ornament, shelter, hedging; provides honey. **Invades:** Forest margins, savanna, coastal grassland, watercourses, wetlands. **Origin:** S America. **Irritant:** Skin, respiratory tract (sap). **Poisonous:** Fruit, in quantity.



Geoff Nichols

Trees & Shrubs Woody: leaves pinnate

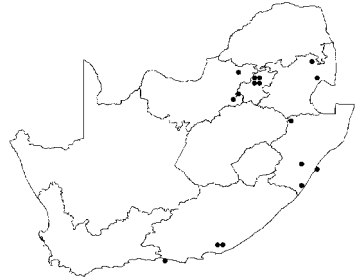


Senna corymbosa

Argentine senna

FABACEAE

Description: Hairless, softly-woody shrub 2–3 m high.
Leaves: Light green, leaflets in 2–3 pairs, lanceolate (compare with *S. septemtrionalis*), to 6 cm long, long-tapering, with pointed tips and slightly asymmetric bases; leaf stalk without glands; rachis with a stalked gland between lowest pair of leaflets only. **Flowers:** Bright yellow, in axillary racemes 4.5–6 cm long, Feb–Jul.
Fruits: Pods (A), cylindric, inflated, internally septate, slightly upwardly curved, ± 10 cm long, not or slowly dehiscent, usually exerted above foliage. **Cultivated for:** Ornament. **Invades:** Savanna, riverbanks, urban open space. **Origin:** S America.

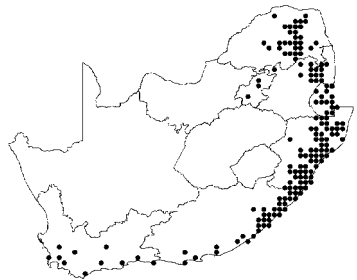


Senna didymobotrya

peanut butter cassia

FABACEAE

Description: Evergreen, rounded shrub or small tree 1–3(–6) m high; young shoots downy; flowers and cut stems smell of peanut butter. **Leaves:** Dark green, with 8–21 pairs of ovate-oblong leaflets 2–5 cm long, bases asymmetric, tips shortly pointed; stipules ovate, with a tapering point, persistent. **Flowers:** Bright yellow (A), buds dark brown, in narrow, erect racemes to 45 cm long, all year. **Fruits:** Pods (B), softly downy, flattened, ± 10 x 2 cm, long-beaked. **Cultivated for:** Ornament, hedging. **Invades:** Grassland, coastal bush, woodland, riverbanks, wasteland. **Origin:** Tropical Africa.
Poisonous: All parts; toxic to livestock.

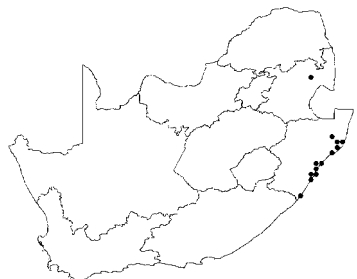


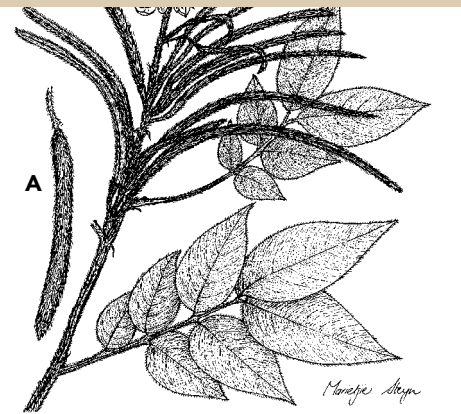
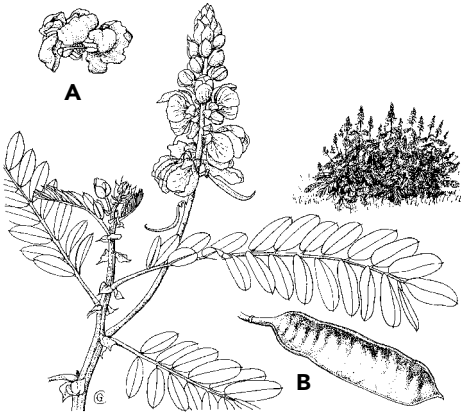
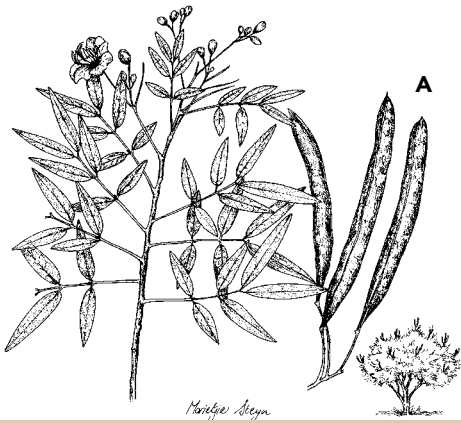
Senna hirsuta

hairy senna, woolly senna

FABACEAE

Description: Hairy, short-lived shrub 1–3 m high.
Leaves: Greyish white-hairy; leaflets in 3–5 pairs, elliptic, 5–7.5 cm long, tips pointed; leaf stalk with a finger-like gland; rachis without glands. **Flowers:** Deep orange-yellow, becoming conspicuously brown-veined with age, in axillary racemes ± 3 cm long, Apr–Jul.
Fruits: Pods (A), brown, covered with long, whitish hairs; flattened, mostly curving downwards, 10–15 cm long, faintly septate; dehiscent. **Cultivated for:** Ornament. **Invades:** Savanna, coastal bush, grassland, forest margins, riverbanks. **Origin:** Tropical America.





Geoff Nichols

Trees & Shrubs Woody: leaves pinnate

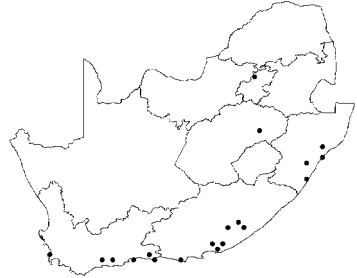


Senna multiglandulosa

downy senna

FABACEAE

Description: Shrub or small tree 3–4 m high; young stems, leaf stalks and undersurfaces of leaflets golden-hairy. **Leaves:** Yellowish green, leaflets in (3–)6–8 pairs, oblong or elliptic, 1.5–5 cm long, tips pointed or occasionally rounded, leaf stalk without glands, rachis glandular between each pair of leaflets. **Flowers:** Deep yellow, in axillary racemes 3–7 cm long, all year. **Fruits:** Pods, ~ flattened, faintly septate, sutures slightly thickened, corrugated over the seeds, 7–11 cm long, indehiscent, pendulous. **Cultivated for:** Ornament. **Invades:** Savanna, forest clearings, riverbanks. **Origin:** Mexico, C and S America.

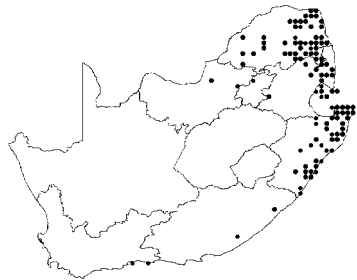


Senna occidentalis

stinking weed, wild coffee

FABACEAE

Description: Slightly woody shrub 0.5–2 m high; ~ hairless to sparsely, shortly hairy. **Leaves:** Green, leaflets in 4–5(–6) pairs, ovate to lanceolate-elliptic, (2.5–)4–10 cm long, tips pointed, stalk with a conspicuous gland, rachis without glands. **Flowers:** Pale yellow, in 2–4 flowered, axillary racemes, Feb–Mar(–all year). **Fruits:** Pods, brown with paler, thickened margins, flattened, septate, 8–13 cm long. **Cultivated for:** Ornament, coffee substitute, medicinal purposes. **Invades:** Savanna, grassland, coastal sandflats, roadsides, riverbanks, old lands. **Origin:** Tropical America. **Poisonous:** To livestock and horses.

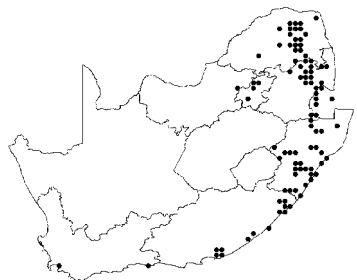


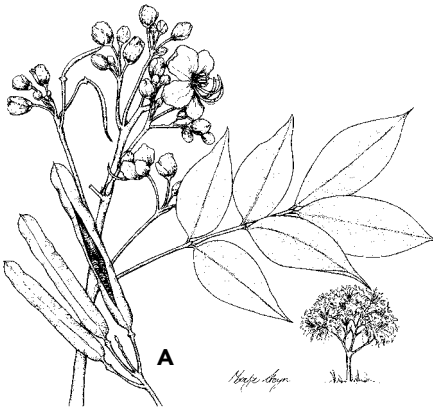
Senna septemtrionalis

arsenic bush, smooth senna

FABACEAE

Description: Hairless, softly-woody shrub or small tree 1–4 m high. **Leaves:** Bright green; leaflets usually in 3–4 pairs, broadly ovate or elliptic to 10 cm long, long-tapering, with pointed tips; leaf stalk without glands; rachis glandular between all, or all but topmost pair of leaflets. **Flowers:** Bright yellow, in axillary racemes 6–10 cm long, all year. **Fruits:** Pods (A), cylindric, inflated, internally septate, apex rounded, shortly or not beaked, 7–10 cm long, slowly dehiscent, usually immersed in the foliage. **Cultivated for:** Ornament. **Invades:** Forest margins, savanna, riverbanks. **Origin:** Mexico and C America. **Poisonous?**





Trees & Shrubs Woody: leaves pinnate

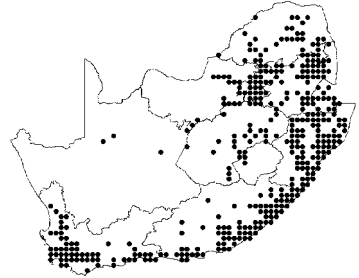


Sesbania punicea

red sesbania

FABACEAE

Description: Deciduous shrub or small tree up to 4 m high with many, slender branches. **Leaves:** Dark green, drooping, 10–20 cm long; leaflets oblong, ending in tiny, pointed tips. **Flowers:** Red or orange, \pm 2 cm long, showy, in dense sprays up to 25 cm long that droop or project outwards, Sep–Mar. **Fruits:** Pods, longitudinally 4-winged, oblong, 6–8 x 1 cm, tip sharply pointed, with 4–10 seeds separated by cross-partitions. **Cultivated for:** Ornament. **Invades:** Riverbanks, riverbeds, wetlands, wasteland, roadsides and ditches in high rainfall areas. **Origin:** Brazil, Paraguay, Uruguay, Argentina. **Poisonous:** Seeds; especially toxic to birds. **NB:** Red sesbania is a minor weed where biological control has been implemented.

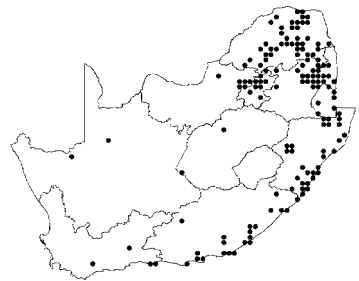


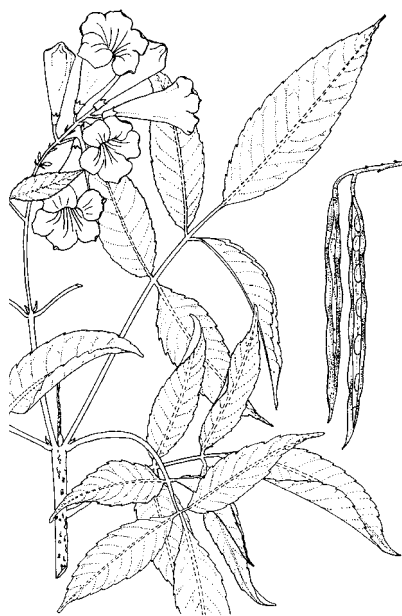
Tecoma stans

yellow bells

BIGNONIACEAE

Description: Ornamental, densely leafy, evergreen shrub or small tree 2–4(–6) m high. **Leaves:** Bright green above, paler below, 10–20 cm long, leaflets 5–13, margins sharply toothed. **Flowers:** Bright yellow, showy, faintly striated, trumpet-shaped, \pm 5 cm long, in terminal sprays, Oct–May. **Fruits:** Brown, shiny capsules, 12–20 cm long, splitting open to release many, papery-winged seeds. **Cultivated for:** Ornament. **Invades:** Savanna, watercourses, rocky sites, urban open spaces, roadsides, railway lines, wasteland. **Origin:** Possibly Mexico and S USA (southern Texas, Arizona, New Mexico).





Geoff Nichols

Trees & Shrubs Woody: leaves pinnate

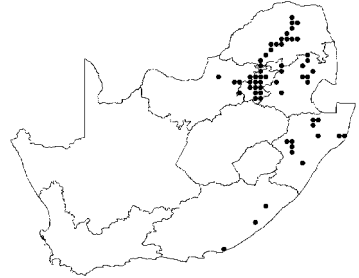


Tipuana tipu

tipu tree

FABACEAE

Description: Large, massively branched, wide-spreading, deciduous tree up to 23 m high. **Leaves:** Bright green, hairless, 10–25 cm long, with 11–23 leaflets. **Flowers:** Deep yellow, reddish centrally, edges of petals wavy, ± 2 cm long, in short, terminal or axillary sprays, Sep–Jan. **Fruits:** Yellowish brown, 1–3 seeded, winged pods 5–6 cm long. **Cultivated for:** Ornament, shade; provides honey, fodder, timber. **Invades:** Roadsides, riverbanks, urban open space, wasteland. **Origin:** Brazil, Bolivia and Argentina.

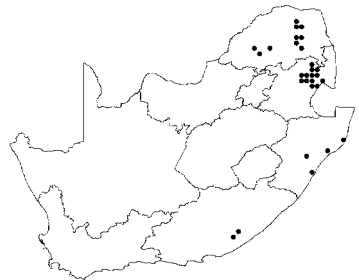


Toona ciliata

toon tree

MELIACEAE

Description: Semi-deciduous tree 10–35 m high, forming a wide, rounded crown with drooping foliage. **Leaves:** Bright green, hairless, even-pinnate, mature leaflets entire, odourless when crushed, basal lateral veins on lower surface without axillary pockets (as opposed to *Cedrela odorata*). **Flowers:** White or yellowish, 5 mm long, fragrant, in pendulous sprays, Sep–Mar. **Fruits:** Delicate, 5-valved, woody capsules ± 2 cm long, splitting open and valves breaking off; seeds winged at both ends (winged below in *Cedrela odorata*). **Cultivated for:** Timber, ornament, shade. **Invades:** Forest gaps, plantations, riverbanks. **Origin:** Asia to Australia.

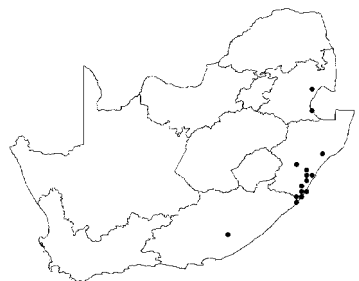


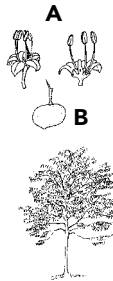
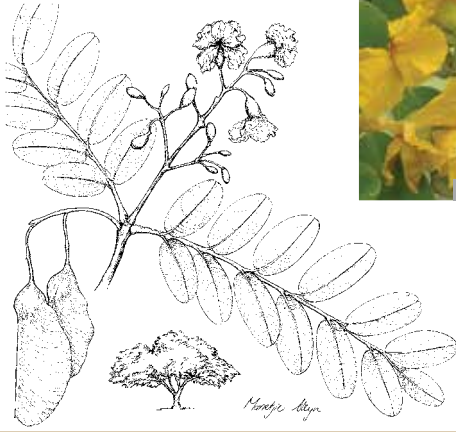
Toxicodendron succedaneum (= *Rhus succedanea*)

wax tree

ANACARDIACEAE

Description: Deciduous, spreading tree up to 10 m high; branches and tips upturned; stems with resinous latex. **Leaves:** Glossy dark green, sometimes bluish green beneath, turning soft red in autumn, uneven-pinnate, with 9–15 leaflets 5–9 cm long. **Flowers:** Yellowish green (**A**), 1–2 mm long, in axillary panicles 10–20 cm long, Aug–Sep. **Fruits:** White or pale yellowish-brown, shiny, slightly flattened, 1-seeded drupes (**B**) ± 1 cm across. **Cultivated for:** Ornament. **Invades:** Moist forest and plantation margins, woodland, roadsides. **Origin:** S Japan to India. **Irritant:** Skin (sap). **Poisonous:** Whole plant.







Acer negundo

ash-leaved maple, box elder

SAPINDACEAE

Description: Deciduous tree 10–20 m high with a spreading crown and often more than one trunk; bark greenish smooth at first, ageing to brown and rough. **Leaves:** Bright green, paler and sometimes densely hairy beneath, turning yellow in autumn; leaflets 3–9, but usually 5, coarsely toothed, 5–10 cm long. **Flowers:** Greenish yellow, in drooping sprays, 10–20 cm long, early spring. **Fruits:** Yellowish brown, paired, winged nuts (samaras), in drooping sprays. **Cultivated for:** Ornament, shade. **Invades:** Forest margins and streambanks in cool regions (G, FS, M, KZN, EC, WC). **Origin:** Canada, USA, Mexico. **Poisonous:** Seeds; toxic to horses.



Fraxinus americana

American ash, white ash

OLEACEAE

Description: Deciduous tree 20–30 m high; crown conical to rounded; bark thick, with diamond-shaped pattern; twigs hairless. **Leaves:** Dark green above, whitish below; leaflets 5–9, but usually 7, broadly lanceolate, entire or with a few teeth near the tip, shortly stalked, 6–13 cm long. **Flowers:** Green to purplish, very small, in branched, terminal clusters, early spring. **Fruits:** Winged nuts (samaras), 2.5–5 cm long, apex usually rounded. **Cultivated for:** Ornament, shade. **Invades:** Roadsides and streambanks in cool regions (G, FS, M, KZN, EC). **Origin:** Canada, USA. **NB:** *F. pennsylvanica*, green ash, is similar but leaflets greenish below and coarsely toothed.



Fraxinus angustifolia

Algerian ash, narrow-leaved ash

OLEACEAE



Description: Deciduous tree to 25 m high; leaf buds dark brown; twigs hairless; lenticels smooth. **Leaves:** Bright green; leaflets 7–11(–13), lanceolate to narrowly lanceolate or elliptic, 2–5 cm x 1–2.5 cm, apex acute, margins coarsely toothed, stalkless, hairless; rachis furrowed except where leaflets are attached. **Flowers:** Greenish yellow, in simple, unbranched racemes, early spring. **Fruits:** Winged nuts (samaras) 3–5 cm long, apex rounded to acute. **Cultivated for:** Ornament, shade. **Invades:** Roadsides, streambanks in cool regions (FS, NC, WC). **Origin:** Europe, N Africa, W Asia. **NB:** *F. excelsior*, European ash: leaf buds black; lenticels warty; flowers in large, branched panicles; *F. velutina*, velvet ash: twigs hairy; leaflets stalked; lenticels warty.



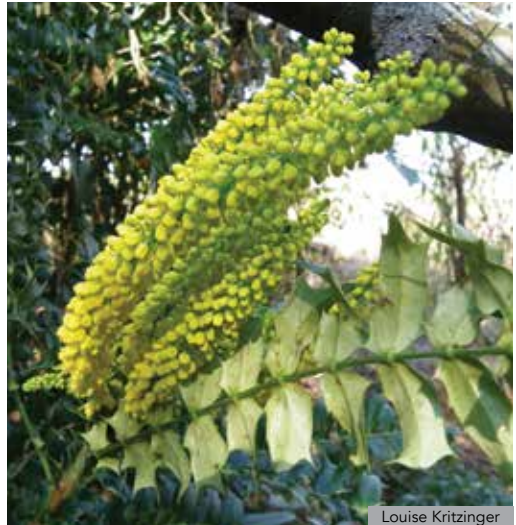
Mahonia oiwakensis (= *M. lomariifolia*)

Chinese hollygrape

BERBERIDACEAE



Description: Evergreen shrub or tree 1–7 m high. **Leaves:** Dark green above, yellowish green below, up to 45 cm long, with 12–20 pairs of leaflets and one terminal leaflet; leaflets leathery, ovate-lanceolate to lanceolate, with 2–9 spiny marginal teeth. **Flowers:** Golden yellow, with three whorls of sepals and one whorl of petals, in dense, clustered racemes, 9–25 cm long; May–Sep. **Fruits:** Fleshy berries, blue or bluish black, covered with a powdery bloom, conical-ovoid, up to 8 mm long. **Cultivated for:** Ornament. **Invades:** Savanna, urban open spaces (G). **Origin:** C and SW China, Taiwan.



Louise Kritzing



Murraya paniculata

orange jessamine

RUTACEAE

Description: Evergreen shrub or tree 1.8–12 m high. **Leaves:** Green, hairless, shiny; leaflets 2–7(–9), ovate to elliptic or obovate, 1–9 x 0.5–6 cm, margin entire or shallowly toothed; apex rounded to long-pointed. **Flowers:** White, orange-blossom fragrant, in terminal or axillary inflorescences, 5 petals 1–2 cm long, sepals persistent in fruit, summer. **Fruits:** Orange to red, berries, narrowly ellipsoid, to 2 cm long; seeds covered with long hairs. **Cultivated for:** Ornament, hedging. **Invades:** Coastal urban areas (KZN: Durban); potentially invasive in forest. **Origin:** Asia and N Australia. **NB:** There is general consensus that *M. paniculata* (= *M. exotica*). Host plant of damaging insects (fruit flies and Asian citrus psyllid) to the fruit industry.



Geoff Nichols

Rhus glabra

scarlet sumach, vinegar bush

ANACARDIACEAE

Description: Deciduous, multistemmed shrub or tree up to 3 m or more high with a spreading crown and rhizomatous root system; capable of forming large colonies. **Leaves:** Dark green above, much paler below, 30–50 cm long, pinnate with a terminal leaflet; leaflets 11–31 and 5–11 cm long, lanceolate to narrowly oblong, with toothed margins. **Flowers:** Greenish yellow, in dense, erect panicles 10–25 cm long, spring. **Fruits:** Red, hairy, berry-like drupes, 6 mm across, in dense, erect clusters. **Cultivated for:** Ornament, edible fruit. **Potentially invasive:** Grasslands, wetlands, streambanks. **Origin:** Canada, USA, Mexico.



Wikimedia Commons, Public Domain

Spathodea campanulata

African flame tree

BIGNONIACEAE

Description: Evergreen or semi-evergreen tree 12–18 m high; branches with small, white lenticels. **Leaves:** Dark green and glossy above, paler beneath and at first ~ densely golden-hairy, to 45 cm long; uneven-pinnate; leaflets 9–19, up to 17 x 6 cm, stalkless or shortly stalked, apex pointed, base with a large gland. **Flowers:** Orange-red to scarlet, cup-shaped to 10 x 7 cm, calyx spathe-like, corolla lobes erect with wavy margins, buds velvety-brown and inward-curved, in terminal sprays, late summer. **Fruits:** Brown capsules 15–25 cm long, held erect; seeds papery, winged. **Cultivated for:** Ornament. **Invades:** Forest margins, ravines (L, M, KZN, EC). **Origin:** W Africa.



Styphnolobium japonicum (= *Sophora japonica*)

Japanese pagoda tree

FABACEAE

Description: Deciduous tree 10–12 m high with a rounded, spreading crown; bark grey-brown, longitudinally striate; current year's branches green, hairless. **Leaves:** Dark green above, paler and often greyish beneath, papery, to 22 cm long, stalk inflated at base; uneven-pinnate; leaflets 7–15, 3–6 cm long, bristle-tipped, shortly stalked. **Flowers:** White or cream, pea-shaped, ± 1 cm long, in large, loosely branched, terminal sprays to 30 cm long, mid summer. **Fruits:** Brownish yellow, leathery pods, 5–10 cm long, indehiscent, constricted between the seeds. **Cultivated for:** Ornament, shade. **Invades:** Riverbanks (G, FS). **Origin:** China.



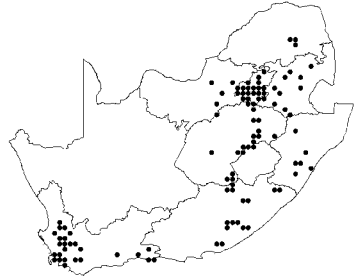
Trees & Shrubs Woody: leaves bipinnate

Acacia baileyana

Bailey's wattle

FABACEAE

Description: Small, unarmed, evergreen tree 3–6(–9) m high; branchlets and foliage with a greyish or bluish powdery bloom. **Leaves:** Greyish or silvery blue, sometimes tinged purple; spirally arranged, 2–5 cm long, with 2–3(–4) pairs of primary leaflets; a gland occurs at the junction of each primary leaflet pair or only the top few primary leaflet pairs (**A**). **Flowers:** Bright yellow, globular heads in showy sprays, Jul–Sep. **Fruits:** Greyish brown pods. **Cultivated for:** Ornament, shade, shelter; honey source. **Invades:** Grassland, fynbos, urban open spaces, watercourses. **Origin:** SE Australia.

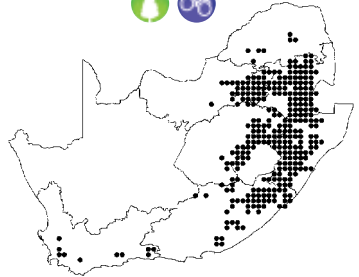


Acacia dealbata

silver wattle

FABACEAE

Description: Unarmed, evergreen tree 5–10(–15) m high; often tinged grey or purple; growth tips velvety-hairy, yellow turning greyish or white. **Leaves:** Silvery-grey to light green, finely hairy, secondary leaflets short (2–5 mm) and crowded; a raised gland occurs at each junction of primary leaflet pairs (**A**). **Flowers:** Pale to bright yellow, globular heads in large, fragrant sprays, Jul–Aug. **Fruits:** Greyish or purplish brown pods, not or only slightly constricted. **Cultivated for:** Shelter, shade; provides firewood and construction poles. **Invades:** Grassland, plantations, forest margins, watercourses. **Origin:** E Australia.

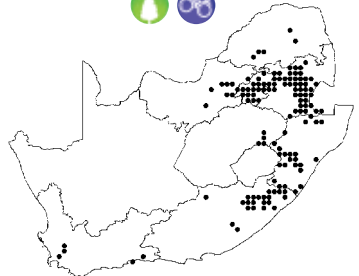


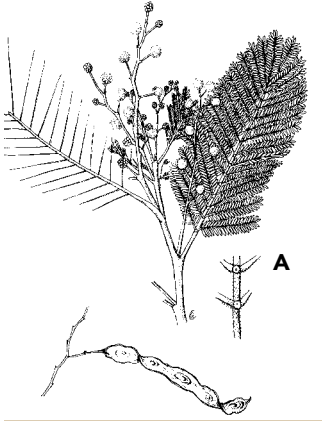
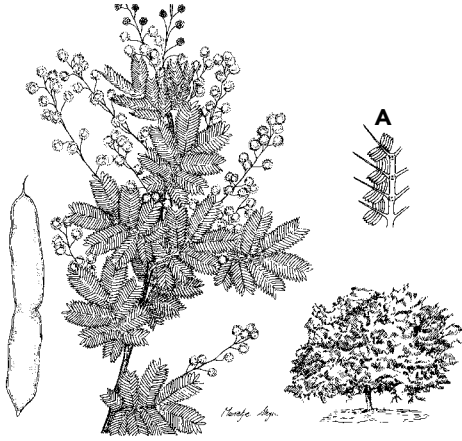
Acacia decurrens

green wattle

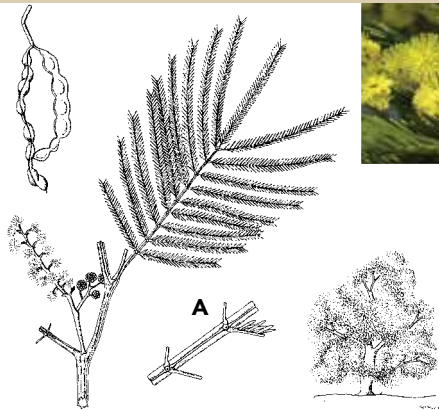
FABACEAE

Description: Unarmed, evergreen tree 5–10(–15) m high; devoid of hairs or powdery bloom; branchlets prominently angled with wing-like ridges. **Leaves:** Bright green, hairless, feathery; secondary leaflets long (6–15 mm) and slender; a single raised gland occurs at each junction of primary leaflet pairs (**A**). **Flowers:** Bright yellow, globular flowerheads in showy, fragrant sprays, Jul–Aug. **Fruits:** Dark brown pods, hairless, slightly constricted. **Cultivated for:** Shade, shelter, ornament; provides firewood and construction poles. **Invades:** Grassland, plantations, roadsides, watercourses. **Origin:** SE Australia.





Geoff Nichols



Geoff Nichols



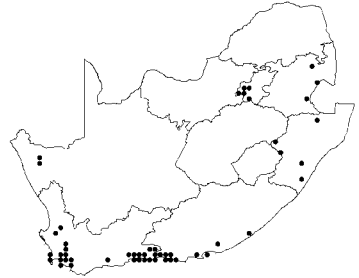
Trees & Shrubs Woody: leaves bipinnate

Acacia elata

peppertree wattle

FABACEAE

Description: Unarmed, evergreen tree up to 20 m high with an oval crown; trunk often with heavy, low, side limbs; young shoots golden-hairy. **Leaves:** Dark green and glossy above, large, 30–40 cm long; leaflets large, 2–5 cm long and 4–10 mm wide, lanceolate. **Flowers:** Pale yellow or cream, globular flowerheads in sprays, Oct–Dec. **Fruits:** Brown pods, finely golden-hairy, 10–16 cm long. **Cultivated for:** Ornament, shade, shelter. **Invades:** Forest clearings, fynbos, grassland, plantations, watercourses, ravines, roadsides, urban open spaces. **Origin:** SE Australia.

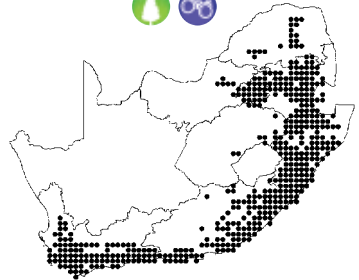


Acacia mearnsii

black wattle

FABACEAE

Description: Unarmed, evergreen tree 5–10(–15) m high; all parts finely hairy; growth tips golden-hairy. **Leaves:** Dark olive-green, finely hairy, bipinnate; secondary leaflets short (2–4 mm) and crowded; raised glands occur at and between the junctions of primary leaflet pairs (A). **Flowers:** Pale yellow or cream, globular flowerheads in large, fragrant sprays, Aug–Sep. **Fruits:** Dark brown pods, finely hairy, usually markedly constricted. **Cultivated for:** Shelter, tanbark, woodchips, shade, firewood and construction poles. **Invades:** Grassland, forest gaps, plantations, roadsides, watercourses. **Origin:** SE Australia.

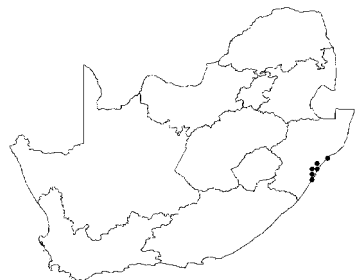


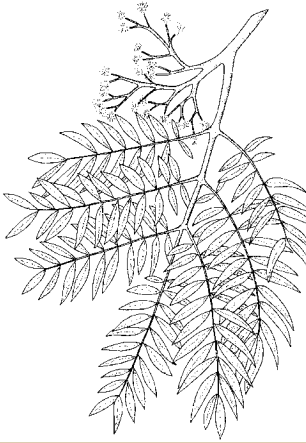
Albizia lebeck

lebbeck tree

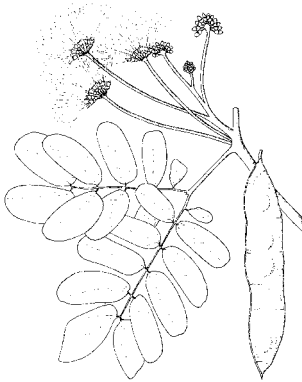
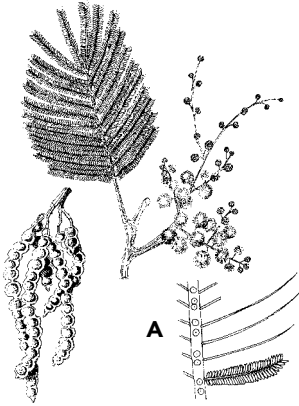
FABACEAE

Description: Unarmed, deciduous or semi-evergreen, spreading tree to 15 m high; bark grey, rough, not peeling; branchlets shortly hairy becoming hairless. **Leaves:** Light green; leaflets with 3–4 basal veinlets, 8–24 mm wide, not markedly discolourous, margins not curled (as in *A. suluensis*). **Flowers:** Whitish or yellowish with long-exserted stamens; on stalks 2–5 mm long, in axillary globose clusters, Nov–Mar. **Fruits:** Straw-coloured pods, 15–30 x 3–4.5 cm, hairless, shiny, with raised bumps over the seeds. **Cultivated for:** Ornament, shade. **Invades:** Subtropical coastal bush, riverbanks. **Origin:** Tropical Asia.





Geoff Nichols



Photos: Geoff Nichols

Trees & Shrubs Woody: leaves bipinnate

Albizia procera

false lebbbeck

FABACEAE

Description: Unarmed, deciduous or semi-evergreen, spreading tree to 15 m high; bark whitish to grey, smooth, peeling in thin flakes, branchlets ~ hairless.

Leaves: Green; leaflets with 2 basal veinlets, 8–15 mm wide, markedly discolorous, margins not curled (as in the indigenous *A. suluensis*). **Flowers:** Whitish or yellowish with long-exserted stamens; stalkless, in axillary or terminal panicles, Nov–Mar. **Fruits:** Reddish to brown pods, 8–16 x 1.5–2 cm, hairless, shiny, with raised bumps over seeds. **Cultivated for:** Ornament, shade. **Invades:** Subtropical coastal bush, riverbanks. **Origin:** Australasia.

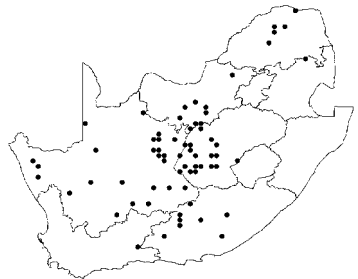


Caesalpinia gilliesii

bird-of-paradise flower

FABACEAE

Description: Evergreen or deciduous, glandular-hairy, unarmed shrub 1.5–3 m high. **Leaves:** Bluish green, secondary leaflets to 1 cm x 3 mm. **Flowers:** Petals yellow, 2–2.5 cm long; stamens red, 10–12 cm long; fragrant, in terminal racemes 15 cm long, spring–early summer. **Fruits:** Pods, ~ hairy, flattened, to 10 x 2 cm, dehiscent. **Cultivated for:** Ornament. **Invades:** Riverbanks, riverbeds, disturbed sites, roadsides in arid and semi-arid areas. **Origin:** Peru, Argentina, Chile, Uruguay. **Poisonous:** Seeds, green pods.

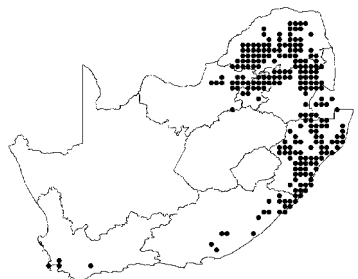


Jacaranda mimosifolia

jacaranda

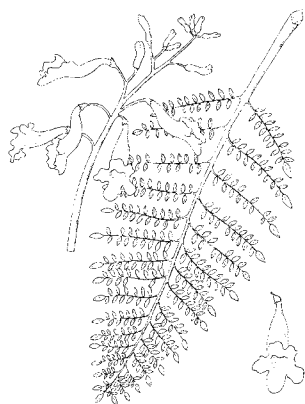
BIGNONIACEAE

Description: Deciduous or semi-deciduous tree to 22 m high; crown rounded, spreading. **Leaves:** Dark green, turning yellow in late autumn, hairy, finely divided and fern-like, 20–40 cm long. **Flowers:** Mauvish blue, lilac or rarely white, tubular, ± 3–5 cm long, in loose, pyramidal sprays at the ends of usually leafless branchlets, Sep–Nov. **Fruits:** Broadly oval, flattish, woody capsules, ± 6 cm long, green turning brown, splitting open after about a year to release numerous flat, winged seeds. **Cultivated for:** Ornament, shade, timber. **Invades:** Savanna, forest gaps, plantations, ravines, rocky ridges, riverbanks. **Origin:** NW Argentina.





Geoff Nichols



Photos: Geoff Nichols

Trees & Shrubs Woody: leaves bipinnate

Leucaena leucocephala

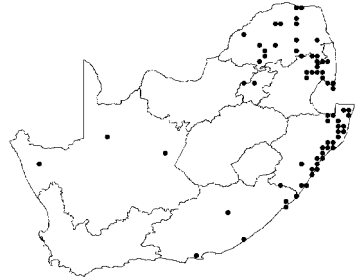
leucaena

FABACEAE

Description: Unarmed, deciduous or evergreen shrub or tree to 4–(10) m high; branchlets densely grey-hairy.

Leaves: Dark green, often grey-hairy, 7–15 cm long, drooping. **Flowers:** White or pale yellow, in globose heads, singly or in groups of 2 or 3 in leaf axils, Jul–Mar.

Fruits: Brown pods, 11–18 cm long, ~ straight, flattened but raised over seeds, in distinctive clusters, splitting into 2 non-recurving halves. **Cultivated for:** Fodder, firewood, timber, ornament, sand-binding. **Invades:** Forest margins, roadsides, wasteland, riverbanks. **Origin:** Mexico, C America. **Poisonous:** Whole plant toxic to livestock in quantity.



Melia azedarach

seringa

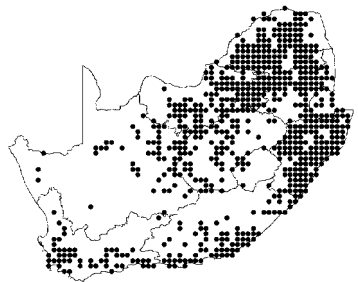
MELIACEAE

Description: Deciduous, spreading tree to 23 m high; bark on young stems reddish brown, smooth. **Leaves:**

Deep green, glossy above, turning yellow in autumn; leaflets toothed, sometimes lobed. **Flowers:** Lilac, ± 1 cm long, with purplish central column, in large, terminal, heavily perfumed sprays, Sep–Nov. **Fruits:**

Berries, green turning yellow, thinly fleshy, becoming wrinkled and persisting after leaves fall. **Cultivated for:** Ornament, shade. **Invades:** Savanna, roadsides, urban open space, wasteland, riverbanks. **Origin:** Asia.

Irritant: Respiratory tract (flowers). **Poisonous:** Ripe fruits toxic to mammals and can be lethal.



Paraserianthes lophantha

stink bean

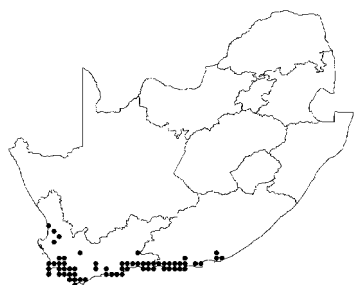
FABACEAE

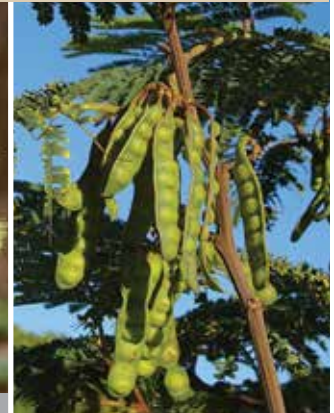
Description: Evergreen shrub or tree 4–6 m high, resembling a large-leaved black wattle (*Acacia mearnsii*).

Leaves: Dark green, paler below, to 30 cm or longer, golden-hairy, becoming ~ hairless; glands absent from rachis, single gland towards base of leaf stalk. **Flowers:** Cream, in dense, bottlebrush-like heads, Jun–Aug. **Fruits:** Brown pods, compressed with bulging seeds, edges raised and thickened; seeds smell when crushed and moistened. **Cultivated for:**

Ornament; honey source. **Invades:** Forest margins, riverbanks, moist slopes in fynbos, wooded kloofs.

Origin: W Australia. **Poisonous?**





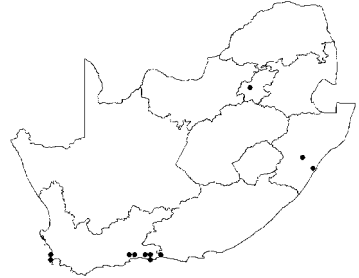


Cyathea cooperi (= *Sphaeropteris cooperi*)

Australian tree fern



Description: Tall, slender, tree-like fern with stem up to 12 m high and diameter of 15 cm; stem patterned with ovate scars where the fronds have been shed (A). **Leaves (fronds):** Bright green, paler beneath, 3 x pinnately compound, giving an open, lace-like effect; up to 5 m long; stipe (stalk) to at least 50 cm long, yellowish brown, warty, base deciduous, covered with pale papery scales 2–5 cm long; leaflets (pinnae) sickle-shaped, margins irregularly toothed. **Fruiting bodies (sori):** Brown, circular, on undersurface of frond; 2–10 per segment in two rows either side of midrib. **Cultivated for:** Ornament. **Invades:** Forests, plantations, wooded kloofs, streambanks. **Origin:** E Australia.



Cyathea cooperi can be distinguished from the following tree ferns:

Indigenous to Australia: *Dicksonia antarctica*—sori single at margin of segment. *Cyathea australis*—old stipe bases persistent; stipe bases with brown, rounded tubercles; thicker trunk. *C. brownii*—stipe hairs uniformly sandy brown and dense (compared with stipe hairs dark at base becoming lighter in *C. cooperi*). Indigenous to South Africa: *C. capensis*—without silky scales in stem crown, instead has moss-like, much-reduced leaves; sori single at base of segment; ultimate segments regularly toothed; grows in forest. *C. dregei*—stipe bases with brown, shiny, twisted scales with long attenuate apices; grows along open streambanks in grassland.



Geoff Nichols



Cyathea cooperi



Photos: Kasey Voges



Cyathea capensis



Kasey Voges



Cyathea dregei



RESTRICTED SPECIES AND NEM:BA

Most of the plants described in this field guide are restricted invasive alien species and their control is subject to the “National Environmental Management: Biodiversity Act” (Act 10 of 2004) and amended in 2013. Regulations concerning alien and invasive species were published in the Government Gazette No. 37885 on 1 August 2014, with amendments to the lists of alien and invasive species on 29 July 2016. Chapters 1, 2 and 3 of the regulations are reproduced here in full, followed by the lists of invasive species.

DEPARTMENT OF ENVIRONMENTAL AFFAIRS

NATIONAL ENVIRONMENTAL MANAGEMENT: BIODIVERSITY ACT (ACT NO. 10 OF 2004)

ALIEN AND INVASIVE SPECIES REGULATIONS, 2014

CHAPTER 1 INTERPRETATION

1. Definitions

In these regulations any word or expression to which a meaning has been assigned in the Act shall have the meaning so assigned and, unless the contents otherwise indicates-

“**authorised official**” means an environmental management inspector and any official employed by the Department;

“**biological control**” means the use of specimens of one species for the purpose of preying on, parasitising on, damaging, killing, suppressing or controlling a specimen of another species;

“**botanical institution**” means an establishment where plants are grown for scientific study and for display to the public;

“**catch and release**” means the catching and release of a live fresh-water animal in the same area as which it was caught;

“**Category 1a Listed Invasive Species**” means invasive species contemplated in Regulation 2;

“**Category 1b Listed Invasive Species**” means invasive species contemplated in Regulation 3;

“**Category 2 Listed Invasive Species**” means invasive species contemplated in Regulation 4;

“**Category 3 Listed Invasive Species**” means invasive species contemplated in Regulation 5;

- “Inter-basin transfer scheme”** means a man-made conveyance scheme which moves water from one river catchment where it is available, to another catchment where water is less available;
- “Invasive Species, Monitoring, Control and Eradication Plan”** means a plan contemplated in section 76 of the Act and in Regulation 8;
- “off-shore island”** means the Prince Edward Islands referred to in the Prince Edward Islands Act, 1948 (Act No. 43 of 1948), any other off-shore island in South Africa’s exclusive economic zone;
- “pathway”** means the route by which a specimen of an alien or invasive listed species is transported, introduced into, dispersed or spread within the Republic, whether by natural, unnatural, deliberate or inadvertent means or by an act of omission;
- “prohibited alien species”** means an alien species listed by notice by the Minister, in respect of which a permit may not be issued as contemplated in section 67(1) of the Act;
- “riparian area”** means within 32 metres of the edge of a river, lake, dam, wetland or estuary, or within the 1:100 year floodline, whichever is the greater;
- “risk assessment”** means a scientific evaluation of the threat or potential threat to ecosystems, habitats, other species, the economy, the environment or human health or well-being posed by a restricted activity involving a specimen of an alien or listed invasive species in terms of Chapter 6 of these regulations;
- “scientific institution”** means
- a) an organ of state that is involved in research;
 - b) a registered research unit of a tertiary institution; or
 - c) a museum or herbarium;
- “vector”** means any object by, with or on which a specimen of an alien or listed invasive species is inadvertently or deliberately transported, dispersed or spread; and
- “zoological institution”** means a facility in which animals are confined within enclosures, displayed to the public, and in which they may also be bred.

CHAPTER 2

CATEGORIES OF LISTED INVASIVE SPECIES

2. Category 1a Listed Invasive Species

- 1) Category 1a Listed Invasive Species are those species listed as such by notice in terms of section 70(1)(a) of the Act as species which must be combatted or eradicated.
- 2) A person in control of a Category 1a Listed Invasive Species must—
 - a) comply with the provisions of section 73(2) of the Act;
 - b) immediately take steps to combat or eradicate listed invasive species in compliance with sections 75(1), (2) and (3) of the Act; and
 - c) allow an authorised official from the Department to enter onto land to monitor, assist with or implement the combatting or eradication of the listed invasive species.

- 3) If an Invasive Species Management Programme has been developed in terms of section 75(4) of the Act, a person must combat or eradicate the listed invasive species in accordance with such programme.

3. Category 1b Listed Invasive Species

- (1) Category 1b Listed Invasive Species are those species listed as such by notice in terms of section 70(1)(a) of the Act as species which must be controlled.
- (2) A person in control of a Category 1b Listed Invasive Species must control the listed invasive species in compliance with sections 75(1), (2) and (3) of the Act.
- (3) If an Invasive Species Management Programme has been developed in terms of section 75(4) of the Act, a person must control the listed invasive species in accordance with such programme.
- (4) A person contemplated in sub-regulation (2) must allow an authorised official from the Department to enter onto the land to monitor, assist with or implement the control of the listed invasive species, or compliance with the Invasive Species Management Programme contemplated in section 75(4) of the Act.

4. Category 2 Listed Invasive Species

- (1) Category 2 Listed Invasive Species are those species listed as such by notice in terms of section 70(1)(a) of the Act as species which require a permit to carry out a restricted activity within an area specified in the Notice or an area specified in the permit, as the case may be.
- (2) Unless otherwise indicated in the Notice, no person may carry out a restricted activity in respect of a Category 2 Listed Invasive Species without a permit.
- (3) A landowner on whose land a Category 2 Listed Invasive Species occurs or person in possession of a permit, must ensure that the specimens of the species do not spread outside of the land or the area specified in the Notice or permit.
- (4) If an Invasive Species Management Programme has been developed in terms of section 75(4) of the Act, a person must control the listed invasive species in accordance with such programme.
- (5) Unless otherwise specified in the Notice, any species listed as Category 2 Listed Invasive Species that occurs outside the specified area contemplated in sub-regulation (1), must for purposes of these regulations, be considered to be a Category 1b Listed Invasive Species and must be managed according to Regulation 3.
- (6) Notwithstanding the specific exemptions relating to existing plantations in respect of Listed Invasive Plant Species published in Government Gazette No. 37886, Notice 599 of 1 August (2014) as amended, any person or organ of state must ensure that the specimens of such Listed Invasive Plant Species do not spread outside of the land over which they have control.

5. Category 3 Listed Invasive Species

- (1) Category 3 Listed Invasive Species are those species listed as such by notice in terms of section 70(1)(a) of the Act, as species which are subject to exemptions in terms of section 71(3) and prohibited in terms of section 71A of the Act, as specified in the Notice.
- (2) Any plant species identified as Category 3 Listed Invasive Species that occurs in riparian areas, must, for the purposes of these regulations, to be considered to be a Category 1b Listed Invasive Species and must be managed according to Regulation 3.
- (3) If an Invasive Species Management Programme has been developed in terms of section 75(4) of the Act, a person must control the listed invasive species in accordance with such programme.

CHAPTER 3 RESTRICTED ACTIVITIES

6. Restricted activities

In addition to those activities defined in terms of section 1 of the Act as **restricted activities***, the following activities are hereby prescribed as restricted activities:

- (a) spreading or allowing the spread of a listed invasive species;
- (b) releasing any specimen of a listed invasive species;
- (c) the transfer or release of a specimen of a listed invasive fresh-water species from one discrete catchment system in which it occurs, to another discrete catchment system in which it does not occur; or, from within a part of a discrete catchment system where it does occur to another part where it does not occur as a result of a natural or artificial barrier;
- (d) discharging of or disposing into any waterway or the ocean, water from an aquarium, or tank or other receptacle that has been used to keep a specimen of an alien species or a listed invasive freshwater species;
- (e) catch and release of a specimen of an alien or listed invasive species to off-shore islands; or
- (f) the release of a specimen of a listed invasive fresh-water fish species, or of a listed invasive fresh-water invertebrate species into a discrete catchment system in which it already occurs.

7. Exempted alien species

An exempted alien specimen or alien specimen for which a permit is required, entering the Republic from outside the country, must be accompanied by veterinary health certificates or phytosanitary certificates as official declaration by the exporting authority that the risk of such specimen becoming a potential vector of invasive diseases or pathogens has been managed.

****Restricted activity**** in relation to a specimen of an alien species or listed invasive species, means—

- (i) importing into the Republic, including introducing from the sea, any specimen of an alien or listed invasive species;
- (ii) having in possession or exercising physical control over any specimen of an alien or listed invasive species;
- (iii) growing, breeding or in any other way propagating any specimen of an alien or listed invasive species, or causing it to multiply;
- (iv) conveying, moving or otherwise translocating any specimen of an alien or listed invasive species;
- (v) selling or otherwise trading in, buying, receiving, giving, donating or accepting as a gift, or in any way acquiring or disposing of a specimen of an alien or listed invasive species; or
- (vi) any other prescribed activity.

NATIONAL LISTS OF INVASIVE PLANT SPECIES

These lists of invasive species were published in Government Gazette No. 40166 on 29 July 2016. The following lists exclude scientific authorities to botanical names and include additional common names which have been sourced from published literature (see Other Sources of Information) and personal communication. Common names in English are followed by Afrikaans (A), isiZulu (Z), isiXhosa (X), Sesotho (S), Tshivenda (V), Shona (Sh), Xitsonga (T) and Ndebele (N).

“Sterile cultivars or hybrids” which are excluded under the current regulations are to be reassessed. † **Repealed September 2020**

“Exempted for existing plantation” means a plantation which existed when this Notice came into effect, is exempted from requiring a permit provided it is authorised in terms of the National Water Act (36/1998).

“Urban area” means the area within the proclaimed urban edge according to the Spatial Land Use Management Act (16/2013).

National list of Invasive Marine Plant Species		
Botanical Name	Common Names	Category/Area
<i>Asparagopsis armata</i>	harpoon weed	3
<i>Asparagopsis taxiformis</i>	pleasing seaweed, limu kohu	3
<i>Schimmelmannia elegans</i>	red alga	1b
<i>Undaria pinnatifida*</i>	Asian kelp	1b

[*Should be moved to Prohibited List pending confirmation of presence in South Africa]

National list of Invasive Terrestrial and Fresh-water Plant Species

Botanical Name	Common Names	Category/Area	
<i>Acacia adunca</i>	cascade wattle, Wallangarra wattle	1a	
<i>Acacia baileyana</i>	Bailey's wattle, Bailey-se-wattel (A)	3	
<i>Acacia cyclops</i>	red eye, rooikrans (A), iwatile (X), iwintili (X)	1b	
<i>Acacia dealbata</i>	silver wattle, silwerwattel (A), umtholo wesilungu (Z), uwatela (Z)	2	
<i>Acacia decurrens</i> and hybrids, varieties and selections	green wattle, groenwattel (A), umtholo wesilungu (Z), uwatela (Z)	2	Exemptions
			Existing plantation
<i>Acacia elata</i> (<i>Acacia terminalis</i> misapplied in South Africa)	peppertree wattle, peperboomwattel (A)	1b	
<i>Acacia fimbriata</i>	fringed wattle, Brisbane wattle	1a	
<i>Acacia implexa</i>	screw-pod wattle	1a	
<i>Acacia longifolia</i>	long-leaved wattle, langblaarwattel (A)	1b	
<i>Acacia mearnsii</i> and hybrids, varieties and selections	black wattle, swartwattel (A), umtholo wesilungu (Z), uwatela (Z), idywabasi (X), iwatlisi (X)	2	Exemptions
			Existing plantation
<i>Acacia melanoxylon</i> and hybrids, varieties and selections	Australian blackwood, Australiese swarthout (A), umtholo ingulukane (Z)	2	Existing plantation
<i>Acacia paradoxa</i> (= <i>A. armata</i>)	kangaroo thorn, kangaroo wattle	1a	
<i>Acacia podalyriifolia</i>	pearl acacia, vaalmimosa (A)	1b	
<i>Acacia pycnantha</i>	golden wattle, gouewattel (A)	1b	

Botanical Name	Common Names	Category/Area
Acacia saligna	Port Jackson, Port Jackson willow, goudwilger (A)	1b
Acacia stricta	hop wattle	1a
Acer buergerianum	Chinese maple, Chinese ahorn (A)	a. 3 in EC, KZN, Lim, Mpm, NW, NC, WC. b. Not listed in urban areas in EC, KZN, Lim, Mpm, NW, NC, WC. c. Not listed elsewhere.
Acer negundo	ash-leaved maple, box elder, essenblaarahorn (A)	a. 3 b. Sterile cultivars or hybrids not listed
Agave americana var. expansa	spreading century-plant, uhalibhoma (Z), ikhamanga (X), iralibhom (X), lekhala (S)	a. 3 in WC. b. Not listed elsewhere
Agave sisalana	sisal hemp, sisal, uhalibhoma (Z)	2
Ageratina adenophora (= <i>Eupatorium adenophorum</i>)	crofton weed	1b
Ageratina riparia (= <i>Eupatorium riparium</i>)	creeping crofton weed, mistflower, misblom (A)	1b
Ageratum conyzoides	invading ageratum, indringer-ageratum (A)	1b
Ageratum houstonianum	Mexican ageratum, Mexikaanse ageratum (A)	a. 1b b. Sterile cultivars or hybrids not listed.
Agrimonia procera (= <i>A. odorata</i>)	scented agrimony, akkermonie (A), geelklits (A), iyeza lomgqwaliso (X), unyinge (X), bohome (S)	1b
Agrostis castellana	bent grass	a. 1a Prince Edward Island. b. 1b Marion Island. c. Not listed on mainland or other off-shore islands

Botanical Name	Common Names	Category/Area
<i>Agrostis gigantea</i>	black bent grass, redtop	a. 1a Prince Edward and Marion Islands. b. Not listed on mainland or other off-shore islands.
<i>Agrostis stolonifera</i>	creeping bent grass	a. 1a Prince Edward Island. b. 1b Marion Island. c. Not listed on mainland or other off-shore islands.
<i>Ailanthus altissima</i>	tree of heaven, stinktree, hemelboom (A)	1b
<i>Albizia lebeck</i>	lebbeck tree, lebbeckboom (A), unjengosolo (Z)	1b
<i>Albizia procera</i>	false lebbeck, basterlebbeck (A)	1b
<i>Alhagi maurorum</i> (= <i>A. camelorum</i>)	camel thorn bush, kameeldoringbos (A)	1b
<i>Alisma plantago-aquatica</i>	mud plantain, wateralisa (A)	1b
<i>Alopecurus geniculatus</i> (= <i>A. australis</i>)	marsh foxtail, water foxtail	a. 1a Prince Edward and Marion Islands b. Not listed on mainland or other off-shore islands.
<i>Alpinia zerumbet</i> (= <i>A. speciosa</i>)	shell ginger, pink porcelain lily, skulpgemmer (A)	3
<i>Ammophila arenaria</i>	Marram grass	3
<i>Anredera cordifolia</i> (<i>A. baselloides</i> misapplied in South Africa)	Madeira vine, bridal wreath, Madeira ranker (A)	1b
<i>Antigonon leptopus</i>	coral creeper, koraalklimop (A)	1b
<i>Araujia sericifera</i>	moth catcher, motvanger (A), impinda (X)	1b
<i>Ardisia crenata</i> (<i>A. crispa</i> misapplied in South Africa)	coralberry tree, coral bush, koraalbessieboom (A)	1b
<i>Ardisia elliptica</i>	shoebuttan ardisia	1b

Botanical Name	Common Names	Category/Area
<i>Argemone mexicana</i>	yellow-flowered Mexican poppy, geelblom bloudissel (A)	1b
<i>Argemone ochroleuca</i>	white-flowered Mexican poppy, witblom bloudissel (A), ikritsi (X), ntsoantsane (S)	1b
<i>Aristolochia elegans</i> —see <i>Aristolochia littoralis</i>		
<i>Aristolochia littoralis</i> (= <i>A. elegans</i>)	Dutchman's pipe, sisblom (A)	1b
<i>Arundo donax</i>	giant reed, Spaanse riet (A); umhlanga, ongesiwona owendabuko (Z); umhlangawezimvu (Z)	1b
<i>Atriplex inflata</i> (= <i>A. lindleyi</i> subsp. <i>inflata</i>)	sponge-fruit saltbush, blasiesoutbos (A)	1b
<i>Atriplex nummularia</i> subsp. <i>nummularia</i>	old man saltbush, oumansoutbos (A)	2
<i>Austrocyliodropuntia cylindrica</i> (= <i>Opuntia cylindrica</i>)	cane cactus, umdolofiya (Z)	1a
<i>Austrocyliodropuntia subulata</i> (= <i>Opuntia exaltata</i>)	long-spine cactus, langdor-ingkaktus (A), umdolofiya (Z), makonde (V)	1b
<i>Azolla cristata</i> (= <i>A. microphylla</i> , <i>A. mexicana</i>)	tropical red water fern, tropiese rooiwatervaring (A)	1b
<i>Azolla filiculoides</i>	azolla, red water fern, rooiwatervaring (A)	1b
<i>Azolla pinnata</i> subsp. <i>asiatica</i> (= <i>A. imbricata</i>)	Asian mosquito fern	1b
<i>Bartlettina sordida</i> (= <i>Eupatorium atrorubens</i> , <i>E. sordidum</i>)	bartlettina	1b

Botanical Name	Common Names	Category/Area
<i>Bauhinia purpurea</i>	butterfly orchid tree, skoenlapperorgideëboom (A)	a. 1b in EC, KZN, Limp, Mpm. b. 3 in FS, Gau, NW, NC, WC.
<i>Bauhinia variegata</i>	orchid tree, orgideëboom (A)	a. 1b in EC, KZN, Limp, Mpm. b. 3 in FS, Gau, NW, NC, WC.
<i>Berberis thunbergii</i>	Japanese barberry, Japanse berberis (A)	a. 3 b. Sterile cultivars or hybrids not listed
<i>Billardiera heterophylla</i> (= <i>Sollya heterophylla</i>)	bluebell creeper	1a
<i>Bryophyllum delagoense</i> (= <i>B. tubiflorum</i> , <i>Kalanchoe tubiflora</i> , <i>K. delagoensis</i>)	chandelier plant, mother of millions, kandelaarplant (A), intelezi yobushwa (X)	1b
<i>Bryophyllum pinnatum</i> (= <i>Kalanchoe pinnata</i>)	cathedral bells	1b
<i>Bryophyllum proliferum</i> (= <i>Kalanchoe prolifera</i>)	green mother of millions	1b
<i>Buddleja davidii</i>	Chinese sagewood, summer lilac, Chinese saliehout (A)	a. 3 b. Sterile cultivars or hybrids not listed
<i>Buddleja madagascariensis</i>	Madagascar sagewood, Madagaskarsaliehout (A)	3
<i>Cabomba caroliniana</i>	cabomba, Carolina fanwort	1a
<i>Caesalpinia decapetala</i> (= <i>C. sepiaria</i>)	Mauritius thorn, Mysore thorn, kraaldoring (A), uvimbangameva (Z), ubobo (X)	1b
<i>Caesalpinia gilliesii</i>	bird-of-paradise flower, paradysvoëlblom (A)	1b
<i>Callisia repens</i>	creeping inch plant	1b

Botanical Name	Common Names	Category/Area
Callistemon citrinus (= <i>Melaleuca citrina</i>)	lemon bottlebrush, lemoenperdestert (A)	3
Callistemon linearis (= <i>C. rigidus</i> , <i>Melaleuca linearis</i>)	stiff-leaved bottlebrush, perdestert (A)	a. 1b in EC, WC. b. 3 in FS, Gau, KZN, Lim, Mpm, NW, NC.
Callistemon rigidus —see <i>Callistemon linearis</i>		
Callistemon viminalis (= <i>Melaleuca viminalis</i>)	weeping bottlebrush, treurperdestert (A)	a. 1b in EC, KZN, Lim, Mpm. b. 3 in FS, Gau, NW, NC, WC. c. Sterile cultivars or hybrids not listed.
Calotropis procera	calotropis, giant milkweed	1b
Campuloclinium macrocephalum (= <i>Eupatorium macrocephalum</i>)	pompom weed, pom-pom bossie (A), uphomuphomu (Z)	1b
Canna indica	Indian shot, Indiese kanna (A), udabulamaxhaphozi (Z), unomatananga (X)	a. 1b b. Sterile cultivars or hybrids not listed. †
Cardiospermum grandiflorum	balloon vine, blaasklimop (A), ugigane (Z)	1b
Cardiospermum halicacabum	lesser balloon vine, blaasklimop (A)	3
Carduus nutans (= <i>C. macrocephalus</i>)	nodding thistle	1b
Casuarina cunninghamiana	beefwood, river she-oak, kasuarisboom (A)	a. 2 b. 1b within 100 metres of riparian areas or untrans- formed land.
Casuarina equisetifolia	horsetail tree, beach she-oak, perdestertboom (A)	2
Catharanthus roseus (= <i>Lochnera rosea</i>)	Madagascar periwinkle, begraafplaasblom (A)	a. 1b b. Sterile cultivars or hybrids not listed.

Botanical Name	Common Names	Category/Area
<i>Celtis australis</i>	nettle tree, European hackberry, netelboom (A)	3
<i>Celtis occidentalis</i>	common hackberry, vals wistinkhout (A)	3
<i>Centranthus ruber</i>	red valerian, devil's beard	a. 1b in WC. b. Not listed elsewhere.
<i>Cerastium fontanum</i>	common mouse-ear chickweed	a. 1b Prince Edward and Marion Islands. b. Not listed on mainland or other off-shore islands.
<i>Cereus hexagonus</i>	queen of the night, nagblom (A)	1b
<i>Cereus hildmannianus</i> (= <i>C. peruvianus</i> , <i>C. uruguayanus</i>)	queen of the night, nagblom (A)	1b
<i>Cereus jamacaru</i>	queen of the night, nagblom (A)	1b
<i>Cestrum aurantiacum</i>	orange cestrum, oranjesestrum (A)	1b
<i>Cestrum elegans</i> (= <i>C. purpureum</i>)	crimson cestrum, karmosynsestrum (A)	1b
<i>Cestrum laevigatum</i>	inkberry, inkbessie (A), um-inki (X)	1b
<i>Cestrum parqui</i>	Chilean cestrum, Chileense inkbessie (A)	1b
<i>Cestrum</i> species not specifically listed	cestrums, sestrums (A)	a. 3 b. Sterile cultivars or hybrids not listed. †
<i>Chondrilla juncea</i>	skeleton weed, intshebe yebhokhwe (X)	1a
<i>Chromolaena odorata</i> (= <i>Eupatorium odoratum</i>)	triffid weed, chromolaena, paraffienbos (A), usandanezwe (Z)	1b

Botanical Name	Common Names	Category/Area
<i>Cinnamomum camphora</i>	camphor tree, kanferboom (A)	a. 1b in EC, KZN, Lim, Mpm. b. 3 in WC. c. National Heritage Trees in terms of the National Heritage Resources Act, 1999, (Act No. 25 of 1999) in EC, KZN, Lim, Mpm and WC, are not listed. d. Not listed elsewhere.
<i>Cirsium vulgare</i> (= <i>C. lanceolatum</i>)	spear thistle, Scotch thistle, speerdissel (A), ikhakhakhaka (X), hlaba (s)	1b
<i>Convolvulus arvensis</i>	field bindweed, wild morning glory, akkerwinde (A)	1b
<i>Coreopsis lanceolata</i>	tickseed, coreopsis	a. 1a b. Sterile cultivars or hybrids not listed. †
<i>Cortaderia jubata</i>	Pampas grass, purple Pam- pas, Pampasgras (A)	1b
<i>Cortaderia selloana</i>	Pampas grass, silwergras (A)	a. 1b b. Sterile cultivars or hybrids not listed. †
<i>Cotoneaster franchetii</i>	orange cotoneaster, oranje cotoneaster (A)	1b
<i>Cotoneaster glaucophyllus</i>	late cotoneaster, bloudwergmispel (A)	1b
<i>Cotoneaster pannosus</i>	silver-leaf cotoneaster, silwerdwegmispel (A)	1b
<i>Cotoneaster salicifolius</i>	willow-leaved showberry	1b
<i>Cotoneaster simonsii</i>	Himalayan cotoneaster, Simon's cotoneaster	1b
<i>Crotalaria agatiflora</i>	canarybird bush, bird flower, voëltjebos (A), umthi wentaka (X)	1b

Botanical Name	Common Names	Category/Area
<i>Cryptostegia grandiflora</i>	rubber vine, rubberklimop (A)	1b
<i>Cryptostegia madagascariensis</i>	Madagascar rubber vine, purple rubber vine	1b
<i>Cuscuta campestris</i>	common dodder, gewone dodder (A)	1b
<i>Cuscuta suaveolens</i>	lucerne dodder, luserndodder (A)	1b
<i>Cylindropuntia fulgida</i> var. <i>fulgida</i> (= <i>Opuntia fulgida</i> ; <i>O. rosea</i> misapplied in South Africa).	chain-fruit cholla (previously known as rosea cactus or roseakaktus (A)), umdolofiya (Z), makonde (V)	1b
<i>Cylindropuntia fulgida</i> var. <i>mamillata</i>	boxing-glove cactus, mamillate cactus, umdolofiya (Z)	1b
<i>Cylindropuntia imbricata</i> (= <i>Opuntia imbricata</i>)	imbricate cactus, imbricate prickly pear, kabelturksy (A), umdolofiya (Z), makonde (V)	1b
<i>Cylindropuntia leptocaulis</i>	pencil cactus, umdolofiya (Z)	1b
<i>Cylindropuntia pallida</i> (<i>C. rosea</i> misapplied)	pink-flowered sheathed cholla, umdolofiya (Z)	1a
<i>Cylindropuntia spinosior</i>	cane cholla, spiny cholla, umdolofiya (Z)	1a
<i>Cytisus scoparius</i> (= <i>Genista scoparia</i>)	Scotch broom, Skotse brem (A)	1a
<i>Datura ferox</i>	large thorn apple, grootstinkblaar (A), ijoye (Z), iloyi (Z)	1b
<i>Datura innoxia</i>	downy thorn apple, harige stinkblaar (A), ijoye (Z), iloyi (Z)	1b
<i>Datura stramonium</i>	common thorn apple, gewone stinkblaar (A), ijoye (Z), iloyi (Z), ibhudabhutha (X), ivumbangwe (X), umvumbangwe (X), umhlavuthwa (X), lechoe (S), lethsove (S), zaba-zaba (T)	1b

Botanical Name	Common Names	Category/Area
<i>Diplocyclos palmatus</i>	lollipop climber	1a
<i>Dolichandra unguis-cati</i> (= <i>Macfadyena unguis-cati</i>)	cat's-claw creeper, katteklouranker (A)	1b
<i>Duchesnea indica</i>	wild strawberry, wilde-aarbei (A)	1b
<i>Duranta erecta</i> (= <i>D. repens</i> , <i>D. plumieri</i>)	forget-me-not tree, pigeon berry, vergeet-my-nie-boom (A)	a. 3 in Gau, KZN, Lim, Mpm, NW. b. 2 for breeding in nurseries in Gau, KZN, Lim, Mpm, NW, but may not be transferred within these Provincial boundaries. c. Not listed elsewhere. d. Sterile cultivars or hybrids not listed. e. "Sheena's Gold" cultivar not listed.
<i>Echinodorus cordifolius</i>	creeping burhead, Radican's sword	1b
<i>Echinodorus tenellus</i> —see <i>Helanthium tenellum</i>		
<i>Echinopsis schickendantzii</i> —see <i>Trichocereus</i> <i>spachianus</i>		
<i>Echium plantagineum</i> (= <i>E. lycopsis</i>)	Patterson's curse, pers-echium (A)	1b
<i>Echium vulgare</i>	blue echium, blou-echium (A), bohomenyana (S)	1b
<i>Egeria densa</i> (= <i>Elodea densa</i>)	dense water weed, waterpes (A)	1b
<i>Eichhornia crassipes</i>	water hyacinth, waterhiasint (A), umantuntanamanzi (Z)	1b
<i>Elodea canadensis</i>	Canadian water weed, Kanadese waterpes (A)	1b

Botanical Name	Common Names	Category/Area
<i>Elymus repens</i> (= <i>Agropyron repens</i> , <i>Elytrigia repens</i>)	couch grass	a. 1a Prince Edward and Marion Islands. b. Not listed on mainland or other off-shore islands.
<i>Elytrigia repens</i> —see <i>Elymus repens</i>		
<i>Equisetum hyemale</i>	rough horsetail, common scouring-rush	1a
<i>Eriobotrya japonica</i>	loquat, lukwart (A)	a. 1b WC and Forest biome. b. Not listed in urban areas of WC. c. Not listed elsewhere. d. Fruit is not listed if used for human consumption.
<i>Eucalyptus</i> species — next page		

Botanical Name	Common Names	Category/Area
<i>Eucalyptus camaldulensis</i> and hybrids, varieties and selections	river red gum, rooibloekom (A), ugamthilini (Z), ugomu (Z), bloukomo (S)	(a) Category 1b within- (i) riparian areas; (ii) a Protected Area declared in terms of the Protected Areas Act; or, (iii) within a Listed Ecosystem or an ecosystem identified for conservation in terms of a Bioregional Plan or Biodiversity Management Plans published under the Act
<i>Eucalyptus cladocalyx</i> and hybrids, varieties and selections	sugar gum, suikerbloekom (A), ugamthilini (Z), ugomu (Z), bloukomo (S)	(b) Not listed within Nama-Karoo, Succulent Karoo and Desert biomes, excluding within any area mentioned in (a) above.
<i>Eucalyptus conferruminata</i> (<i>E. lehmannii</i> misapplied in South Africa) and hybrids, varieties and selections	'spider gum', 'spinnekopbloekom' (A), ugamthilini (Z), ugomu (Z), bloukomo (S)	(c) Category 1b in Fynbos, Grassland, Savanna, Albany Thicket, Forest and Indian Coastal Belt biomes, but- (i) Category 2 for plantations, woodlots, bee-forage areas, wind-rows and the lining of avenues.
<i>Eucalyptus diversicolor</i> and hybrids, varieties and selections	karri, karie (A), ugamthilini (Z), ugomu (Z), bloukomo (S)	(ii) Not listed within cultivated land that is at least 50 metres away from untransformed land, but excluding within any area in (a) above (iii) Not listed within 50 metres of the main house on a farm, but excluding in (a) above.
<i>Eucalyptus grandis</i> (<i>E. saligna</i> in part) and hybrids, varieties and selections	saligna gum, rose gum, salignabloekom (A), ugamthilini (Z), ugomu (Z), bloukomo (S)	(iv) Not listed in urban areas for trees with a diameter of more than 400 mm at 1000 mm height at the time of publishing of this Notice, but excluding in (a) above.
<i>Eucalyptus tereticornis</i> and hybrids, varieties and selections	forest red gum, ugamthilini (Z), ugomu (Z), bloukomo (S)	

Botanical Name	Common Names	Category/Area
<i>Eugenia uniflora</i>	pitanga, Surinam cherry	1b
<i>Euphorbia esula</i> (= <i>E. x pseudovirgata</i> , <i>E. tommasiniana</i> , <i>E. virgata</i>)	leafy spurge	1a
<i>Euphorbia leucocephala</i>	white poinsettia	1b
<i>Fallopia sachalinensis</i> —see <i>Reynoutria sachalinensis</i>		
<i>Festuca rubra</i>	creeping red fescue, red fescue	a. 1a Prince Edward and Marion Islands. b. Not listed on mainland or other off-shore islands.
<i>Flaveria bidentis</i>	smelter's-bush, smeltersbossie (A)	1b
<i>Fraxinus americana</i>	American ash, white ash, Amerikaanse esseboom (A)	a. 3 in EC, KZN, Lim, Mpm, WC. b. Not listed elsewhere.
<i>Fraxinus angustifolia</i>	Algerian ash, Algeriese esseboom (A)	a. 3 in EC, KZN, Lim, Mpm, WC. b. Not listed elsewhere
<i>Furcraea foetida</i>	Mauritian hemp, irhabom (X)	1a
<i>Genista monspessulana</i> (= <i>Cytisus monspessulanus</i> , <i>C. candicans</i>)	Montpellier broom, Montpellierbrem (A)	1a
<i>Gleditsia triacanthos</i>	honey locust, Amerikaanse driendoring (A), leoka (S)	a. 1b b. Sterile cultivars or hybrids not listed.
<i>Glyceria maxima</i> (= <i>Poa aquatica</i> , <i>Glyceria aquatica</i>)	reed meadow grass, reed sweet grass	a. 1b in Protected Areas and wetlands. b. Not listed elsewhere.
<i>Grevillea banksii</i>	Australian crimson oak, red-flowering silky oak, Australiese rooi-eik (A)	1b
<i>Grevillea robusta</i>	Australian silky oak, Australiese silwereik (A)	3
<i>Grevillea rosmarinifolia</i>	rosemary grevillea	3

Botanical Name	Common Names	Category/Area
Hakea drupacea (= <i>H. suaveolens</i>)	sweet hakea, soethakea (A)	1b
Hakea gibbosa	rock hakea, harige hakea (A)	1b
Hakea salicifolia	willow hakea, wilgerhakea (A)	a. 1b in WC. b. Not listed elsewhere.
Hakea sericea	silky hakea, syerige hakea (A)	1b
Harrisia balansae —see <i>Harrisia bonplandii</i>		
Harrisia bonplandii	angular cactus, strangler cactus	1a
Harrisia martinii (= <i>Eriocereus martinii</i>)	moon cactus, harrisia cactus, toukaktus (A), umdolofiya (Z)	1b
Harrisia pomanensis	midnightlady, devil's-rope cactus, umdolofiya (Z)	1a
Harrisia tortuosa	spiny snake cactus, umdolofiya (Z)	1b
Hedera canariensis (= <i>Hedera helix</i> subsp. <i>canariensis</i>)	Canary ivy, Madeira ivy, Algerian ivy, Madeiraklimop (A)	a. 3 b. Sterile cultivars or hybrids not listed.
Hedera helix (= <i>Hedera helix</i> subsp. <i>helix</i>)	English ivy, Engelse hedera (A)	a. 3 b. Sterile cultivars or hybrids not listed.
Hedychium coccineum	red ginger lily, rooigemmerlelie (A)	1b
Hedychium coronarium	white ginger lily, witgemmerlelie (A)	1b
Hedychium flavescens	yellow ginger lily, geelgemmerlelie (A)	1b
Hedychium gardnerianum	kahili ginger lily, kahiligemmerlelie (A)	1b
Helanthium tenellum (= <i>Echinodorus tenellus</i>)	Amazon swordplant	1b

Botanical Name	Common Names	Category/Area
<i>Homalanthus populifolius</i>	bleeding-heart tree, gebrokehartjieboom (A)	1b
<i>Houttuynia cordata</i>	chameleon plant	3
<i>Hydrilla verticillata</i>	hydrilla	1a
<i>Hydrocleys nymphoides</i>	water poppy	1a
<i>Hylocereus undatus</i>	creeping queen of the night, night-blooming cereus, dragon fruit, pitahaya	a. 2 b. Fruit is not listed if used for human consumption.
<i>Hypericum androsaemum</i>	tutsan	1b
<i>Hypericum perforatum</i>	St. John's wort, Tipton weed, Johanneskruid (A)	2
<i>Ipomoea alba</i>	moonflower, maanblom (A)	1b
<i>Ipomoea carnea</i> subsp. <i>fistulosa</i> (= <i>I. fistulosa</i>)	morning-glory bush	1b
<i>Ipomoea indica</i> (= <i>I. congesta</i>)	morning glory, purperwinde (A)	a. 1b b. Sterile cultivars or hybrids not listed. †
<i>Ipomoea purpurea</i>	morning glory, purperwinde (A), ijalamu (Z), imbotyi kasathana (X), urhododo (X)	a. 1b b. Sterile cultivars or hybrids not listed. †
<i>Iris pseudacorus</i>	yellow flag, geel iris (A)	1a
<i>Jacaranda mimosifolia</i>	jacaranda, jakaranda (A), ijakhalanda (Z)	a. 1b in Gau, KZN, Lim, Mpm, NW. b. Not listed for urban areas in Gau, KZN, Lim, Mpm, NW. c. Not listed within 50 metres of the main house on a farm in Gau, KZN, Lim, Mpm, NW, for trees with a diameter of more than 400 mm at 1000 mm height at the time of publishing this Notice, provided such trees are located outside of riparian areas. d. Not listed elsewhere.

Botanical Name	Common Names	Category/Area
<i>Jatropha curcas</i>	physic nut, purgeerboontjie (A), mafuredonga (V)	2
<i>Jatropha gossypifolia</i>	cotton-leaf physic nut	1b
<i>Juniperus virginiana</i>	red cedar, rooiseder (A)	a. 3 in EC, FS. b. Not listed elsewhere.
<i>Kunzea ericoides</i> (= <i>Leptospermum ericoides</i>)	burgan, white tea tree	1a
<i>Lantana</i> : all seed-producing species or seed-producing hybrids that are non-indigenous to South Africa	lantana, tickberry, cherry pie; ubukhwebezane, obungesibo obendabuko (Z); ubhici (Z), ubhicolwesalukazi (Z), utywala bentaka (X), sumba (Sh)	1b
<i>Lepidium draba</i> (= <i>Cardaria draba</i>)	hoary cardaria, peperbos (A)	1b
<i>Leptospermum laevigatum</i>	Australian myrtle, Australiese mirt (A)	1b
<i>Leucaena leucocephala</i> (= <i>L. glauca</i>)	leucaena, reusewattel (A), umdungazwe (Z)	2
<i>Ligustrum japonicum</i>	Japanese wax-leaved privet, Japanese blinkliguster (A)	a. 1b in EC, KZN, Lim, Mpm, NW, WC. b. 3 in FS, Gau, NC.
<i>Ligustrum lucidum</i>	Chinese wax-leaved privet, Chinese blinkliguster (A)	a. 1b in EC, KZN, Lim, Mpm, NW, WC. b. 3 in FS, Gau, NC. c. Sterile cultivars or hybrids not listed. †
<i>Ligustrum ovalifolium</i>	Californian privet, Kaliforniese liguster (A)	a. 1b in EC, KZN, Lim, Mpm, NW, WC. b. 3 in FS, Gau, NC. c. Sterile cultivars or hybrids not listed.
<i>Ligustrum sinense</i>	Chinese privet, Chinese liguster (A)	a. 1b in EC, KZN, Lim, Mpm, NW, WC. b. 3 in FS, Gau, NC.

Botanical Name	Common Names	Category/Area
<i>Ligustrum vulgare</i>	common privet, gewone liguster (A)	a. 1b in EC, KZN, Lim, Mpm, NW, WC. b. 3 in FS, Gau, NC.
<i>Lilium formosanum</i> (= <i>L. longiflorum</i> var. <i>formosanum</i>)	Formosa lily, Formosa lelie (A), icilongo (Z), ubhubha (Z)	1b
<i>Limonium sinuatum</i>	statice, sea lavender, papierblom (A)	a. 1b in NC, WC. b. Not listed elsewhere. c. Sterile cultivars or hybrids not listed. †
<i>Linaria dalmatica</i> (= <i>Antirrhinum dalmaticum</i> , <i>Linaria genistifolia</i> subsp. <i>dalmatica</i>)	Dalmatian toadflax, broad-leaf toadflax	1b
<i>Linaria vulgaris</i>	common toadflax, butter and eggs	1b
<i>Litsea glutinosa</i> (= <i>Litsea sebifera</i>)	Indian laurel, Indiese lourier (A)	1b
<i>Lonicera japonica</i> 'Halliana'	Japanese honeysuckle, Hall's honeysuckle, Japanse kanferfoelie (A)	3
<i>Ludwigia peruviana</i>	water-primrose, Peruvian primrosebush	1a
<i>Luzula multiflora</i>	woodrush	a. 1a Prince Edward and Marion Islands. b. Not listed on mainland or other off-shore islands.
<i>Lythrum hyssopifolia</i>	Hyssop loosestrife	1b
<i>Lythrum salicaria</i>	purple loosestrife	1a
<i>Malva arborea</i> (= <i>M. dendromorpha</i> , <i>Lavatera arborea</i>)	tree mallow, mak kiesieblaar (A)	1b
<i>Malva dendromorpha</i> —see <i>Malva arborea</i>		
<i>Malva verticillata</i>	mallow, kiesieblaar (A), ujongilanga (X), ujongila (X)	1b

Botanical Name	Common Names	Category/Area
<i>Malvastrum coromandelianum</i>	prickly malvastrum	1b
<i>Marsilea mutica</i>	nardoo, Australian water-clover	1a
<i>Melaleuca hypericifolia</i>	red-flowering tea tree	1a
<i>Melaleuca quinquenervia</i>	bottle-brush tree, broad-leaf paperbark	a. 1b b. National Heritage Trees or National Monument Trees in terms of the National Heritage Resources Act, 1999, (Act No. 25 of 1999) are not listed.
<i>Melia azedarach</i>	seringa, seringboom (A), iputshutshu (Z), iseringe (X), umsalinge (X), umsalingwe (X), umserinyeni (X)	a. 1b b. 3 in urban areas.
<i>Metrosideros excelsa</i> (= <i>M. tomentosa</i>)	New Zealand Christmas tree, Nieu-Seelandse perdestert (A)	a. 1a in Overstrand District. b. Not listed elsewhere. c. Sterile cultivars or hybrids not listed. †
<i>Mimosa pigra</i>	giant sensitive plant, raak-my-nie (A), imbune (Z)	1b
<i>Mirabilis jalapa</i>	four-o'clock, marvel-of-Peru, vieruurtjie (A)	1b
<i>Montanoa hibiscifolia</i>	tree daisy	1b
<i>Morus alba</i>	white mulberry, common mulberry, gewone moerbe (A), witmoerbe (A); itshalo, elingelona elomdabu (Z); umalibhele (Z), iqunube (X), inkatshu (X)	a. 3 b. Sterile cultivars or hybrids not listed. † c. Fruit is not listed if used for human consumption.

Botanical Name	Common Names	Category/Area
<i>Murraya paniculata</i> (= <i>M. exotica</i>)	orange jessamine, oranjejasmyn (A)	a. 1b in KZN, Lim, Mpm. b. 2 for breeding in nurseries in KZN, Lim, Mpm, but may not be transferred within these Provincial boundaries. c. Not listed elsewhere. d. Sterile cultivars or hybrids not listed.
<i>Myoporum insulare</i>	manatoka, common boobialla	3
<i>Myoporum laetum</i>	New Zealand manatoka, Nieu-Seelandse manatoka (A)	3
<i>Myoporum montanum</i> (= <i>Myoporum tenuifolium</i> subsp. <i>montanum</i>)	manatoka	3
<i>Myriophyllum aquaticum</i>	parrot's feather, waterduisendblaar (A)	1b
<i>Myriophyllum spicatum</i>	spiked water-milfoil	1b
<i>Myrtillocactus geometrizans</i>	bilberry cactus	1a
<i>Nassella tenuissima</i> (= <i>Stipa tenuissima</i>)	white tussock, witpolgras (A)	1b
<i>Nassella trichotoma</i> (= <i>Stipa trichotoma</i>)	Nassella tussock, Nassella-polgras (A)	1b
<i>Nasturtium officinale</i> (= <i>Rorippa nasturtium-aquaticum</i>)	watercress, bronkors (A), ivatali (X), uwatala (X), umkulu (X)	2
<i>Nephrolepis cordifolia</i> (= <i>Polypodium cordifolium</i>)	erect sword fern, ladder sword fern swaardvaring (A)	a. 1b in EC, KZN, Mpm, Lim, WC. b. 3 in FS, Gau, NW, NC. c. Sterile cultivars or hybrids not listed. †

Botanical Name	Common Names	Category/Area
<i>Nephrolepis exaltata</i> (= <i>Polypodium exaltatum</i>)	sword fern, Boston sword fern, swaardvaring (A)	a. 1b in EC, KZN, Mpm, Lim, WC. b. 3 in FS, Gau, KZN, NW, NC. c. Sterile cultivars or hybrids not listed.
<i>Nerium oleander</i>	oleander, Selonsroos (A)	a. 1b b. Sterile cultivars or hybrids not listed. †
<i>Nicandra physalodes</i>	apple-of-Peru, basterap- pelliefie (A), iguzu lezenga (X), iqwangu qwangu (X), umpungempu (X)	1b
<i>Nicotiana glauca</i>	wild tobacco, wildetabak (A), umgqomagqoma (X), mohla- fotha (S), tabaka bume (S)	1b
<i>Nuphar lutea</i> (= <i>N. minor</i> , <i>N. sericea</i> , <i>N. spathulifera</i> , <i>N. tenella</i> , <i>Nymphaea lutea</i> , <i>N. umbilicalis</i> , <i>Nymphozan- thus luteus</i> , <i>N. sericeus</i> , <i>N. vulgaris</i>)	yellow water lily, geel waterlelie (A)	1a
<i>Nymphaea mexicana</i>	yellow water lily, geel waterlelie (A)	1b
<i>Nymphoides peltata</i> (= <i>Limnanthemum peltatum</i>)	fringed water lily, gringed water lily, yellow floating-heart	1a
<i>Oenothera sinuosa</i> (= <i>Gaura sinuata</i>)	wavy-leaf gaura	3
<i>Opuntia aurantiaca</i>	jointed cactus, litjieskaktus (A), umdolofiya (Z), itolofiya (X), ukatyi (X), makonde (V)	1b
<i>Opuntia elata</i>	orange tuna, umdolofiya (Z), itolofiya (X)	1b

Botanical Name	Common Names	Category/Area
<i>Opuntia engelmannii</i> (= <i>O. lindheimeri</i> , <i>O. tardospina</i>)	small round-leaved prickly pear, kleinrondeblaarturksvy (A), umdolofiya (Z), itolofiya (X)	1b
<i>Opuntia ficus-indica</i> (= <i>O. megacantha</i>)	mission prickly pear, sweet prickly pear, boereturksvy (A), umdolofiya (Z), itolofiya (X), makonde (V)	a. 1b b. Spineless cactus pear cultivars and selections are not listed. c. Fruit is not listed if used for human consumption.
<i>Opuntia humifusa</i> (<i>O. compressa</i> misapplied in South Africa)	large-flowered prickly pear, creeping prickly pear, kruipende turksvy (A), umdolofiya (Z), itolofiya (X)	1b
<i>Opuntia leucotricha</i>	Aaron's-beard prickly pear, umdolofiya (Z), itolofiya (X)	1b
<i>Opuntia microdasys</i>	yellow bunny-ears, teddy-bear cactus, umdolofiya (Z), itolofiya (X)	1b
<i>Opuntia monacantha</i> (<i>O. vulgaris</i> misapplied in South Africa)	cochineal prickly pear, drooping prickly pear, luisiesturksvy (A), umdolofiya (Z), itolofiya (X), makonde (V)	1b
<i>Opuntia pubescens</i> (= <i>O. pestifer</i>)	velvet bur cactus, umdolofiya (Z), itolofiya (X)	1a
<i>Opuntia robusta</i>	blue-leaf cactus, robusta turksvy (A), umdolofiya (Z), itolofiya (X)	a. 1a b. Spineless cultivars and selections not listed.
<i>Opuntia salmiana</i>	bur cactus, umdolofiya (Z), itolofiya (X)	1a
<i>Opuntia spinulifera</i>	saucepan cactus, large round-leaved prickly pear, grootrondeblaarturksvy (A), umdolofiya (Z), itolofiya (X), makonde (V)	1b

Botanical Name	Common Names	Category/Area
<i>Opuntia stricta</i> var. <i>stricta</i> and var. <i>dillenii</i> (= <i>O. dillenii</i>)	pest pear of Australia, suurturksvy (A), umdolofiya (Z), itolofiya (X), makonde (V)	1b
<i>Opuntia tomentosa</i>	velvet opuntia, velvet tree-pear, umdolofiya (Z), itolofiya (X)	1b
<i>Orobanche minor</i>	lesser broomrape, clover broomrape, klawerbesemraap (A)	1b
<i>Orobanche ramosa</i>	blue broomrape, branched broomrape, blouduiwel (A)	1b
<i>Paraserianthes lophantha</i> (= <i>Albizia lophantha</i>)	Australian albizia, stink bean, stinkboon (A)	1b
<i>Parkinsonia aculeata</i>	Jerusalem thorn Mexikaanse groenhaarboom (A)	1b
<i>Parthenium hysterophorus</i>	famine weed, umbulalazwe (Z)	1b
<i>Paspalum quadrifarium</i>	tussock paspalum	1a
<i>Passiflora caerulea</i>	blue passion flower, siergrenadella (A)	1b
<i>Passiflora edulis</i>	purple granadilla, passion fruit, guavadilla, grenadella (A)	a. 2 in EC, Gau, KZN, Mpm, Lim, NW. b. Not listed in urban areas in EC, Gau, KZN, Mpm, Lim, NW. c. Not listed elsewhere. d. Fruit not listed if used for human consumption.
<i>Passiflora suberosa</i>	devil's pumpkin, indigo berry	1b
<i>Passiflora subpeltata</i>	granadina	1b
<i>Passiflora tripartita</i> var. <i>mollissima</i> (= <i>P. mollissima</i>)	banana poka, bananadilla, piesangdilla (A)	1b
<i>Paulownia tomentosa</i> (= <i>Paulownia imperialis</i>)	empress tree, princess tree, royal paulownia, prinsesboom (A)	1a

Botanical Name	Common Names	Category/Area
<i>Peniocereus serpentinus</i> (= <i>Nyctocereus serpentinus</i>)	serpent cactus, snake cactus, umdolofiya (Z)	1b
<i>Pennisetum clandestinum</i>	Kikuyu grass, Kikoejoegras (A), uKukuyi (Z), ungwengwe (Z), umadolwana (X), tajoe (S)	a. 1b in protected areas and wetlands in which it does not already occur. b. Not listed elsewhere.
<i>Pennisetum purpureum</i>	elephant grass, Napier grass, olifantsgras (A), mufufu (Sh)	2
<i>Pennisetum setaceum</i>	fountain grass, pronkgras (A)	a. 1b b. Sterile cultivars or hybrids not listed.
<i>Pennisetum villosum</i>	feathertop, veergras (A)	1b
<i>Pereskia aculeata</i>	pereskia, Barbados gooseberry, uzimbeva (Z)	1b
<i>Persicaria capitata</i> (= <i>Polygonum capitatum</i>)	creeping knotweed, knoopkruid (A)	1b
<i>Phlebodium aureum</i> (= <i>Polypodium aureum</i>)	rabbit's-foot fern, haaspoetvaring (A)	a. 3 in EC, KZN, Lim, Mpm. b. Not listed elsewhere
<i>Phytolacca americana</i> (= <i>P. decandra</i>)	American pokeweed, inkbos (A), unomadolomade (X)	1b
<i>Phytolacca dioica</i>	belhambra, bobbejaandruifboom (A), umzimuka (Z), impangapanga (X), isidungamsi (X)	3
<i>Phytolacca octandra</i>	forest inkberry, bobbejaandruif (A), umnyandla (Z), umnanja (X)	1b
<i>Pinus canariensis</i>	Canary pine, Kanariese den (A), unwele (Z)	3
<i>Pinus elliottii</i> and hybrids, varieties and selections	slash pine, basden (A), unwele (Z)	a. 2 for sterile specimens. b. 1b for non-sterile specimens.
		Exemptions Existing plantation of sterile specimens.

Botanical Name	Common Names	Category/Area	
<i>Pinus halepensis</i>	Aleppo pine, Aleppoden (A), unwele (Z)	a. 3 in EC, FS, WC. b. Not listed elsewhere.	
<i>Pinus patula</i> and hybrids, varieties and selections	patula pine, treurden (A), unwele (Z)	2	Exemptions
			Existing plantation.
<i>Pinus pinaster</i> and hybrids, varieties and selections	cluster pine, trosden (A), unwele (Z)	a. 2 for plantations and wind-rows. b. 1b elsewhere. c. National Heritage Trees or National Monument Trees in terms of the National Heritage Resources Act 1999, (Act No. 25 of 1999) not listed. d. Except for "a" above, specimens with a circumference greater than 1.256 m at a height of 1000 mm at the date of publication of this Notice are not listed for urban areas in Cape Town, the Overberg District Council and Winelands District Council, except when in riparian areas or in a protected area or any property directly abutting a protected area, where they remain listed as Category 1b.	
Exemptions			
Existing plantation outside the WC. Existing plantations in the Western Cape are exempted from undertaking a risk assessment in terms of section 71(2) of the Act prior to applying for a permit.			
<i>Pinus roxburghii</i> (= <i>P. longifolia</i>) and hybrids, varieties and selections	chir pine, longifolia pine, tjirden (A), unwele (Z)	2	
<i>Pinus taeda</i> and hybrids, varieties and selections	loblolly pine, loblollyden (A), unwele (Z)	2	

Botanical Name	Common Names	Category/Area
<i>Pistia stratiotes</i>	water lettuce, waterslaai (A), indwane (Z)	1b
<i>Pittosporum crassifolium</i>	karo, stiff-leaved cheese-wood, styweblaarkasuur (A)	3
<i>Pittosporum undulatum</i>	Australian cheesewood, sweet pittosporum, Australiese kasuur (A)	1b
<i>Plectranthus barbatus</i> var. <i>grandis</i> (= <i>Coleus grandis</i> ; <i>Plectranthus comosus</i> misapplied)	'Abyssinian' coleus, woolly plectranthus, 'Abessiniese' coleus (A), umgobogobo (X)	1b
<i>Poa pratensis</i>	Kentucky bluegrass	a. 1a Prince Edward Island. b. 1b Marion Island. c. Not listed on mainland or other off-shore islands.
<i>Polypodium aureum</i> —see <i>Phlebodium aureum</i>		
<i>Pontederia cordata</i>	pickerel weed, jongsnoekkruid (A), ihleza (Z)	1b
<i>Populus alba</i>	white poplar, witpopulier (A), upopulini (Z), popoliri (S)	2
<i>Populus</i> x <i>canescens</i>	grey poplar, vaalpopulier (A), upopulini (Z), popoliri (S)	2
<i>Prosopis glandulosa</i> var. <i>torreyana</i> and hybrids	honey mesquite, heuningprosopis (A)	a. 1b in EC, FS, NW, WC. b. 3 in NC. c. Utilisation of the pods for fodder is not listed in NC, EC, FS, NW, WC. d. Not listed elsewhere.
<i>Prosopis velutina</i> and hybrids	velvet mesquite, fluweelprosopis (A)	a. 1b in EC, FS, NW, WC. b. 3 in NC. c. Utilisation of the pods for fodder is not listed in NC, EC, FS, NW, WC. d. Not listed elsewhere.
<i>Prunus serotina</i>	black cherry, swartkersie (A)	1b

Botanical Name	Common Names	Category/Area
<i>Psidium cattleianum</i> (= <i>P. littorale</i> var. <i>longipes</i>)	strawberry guava, aarbeikoejawel (A)	1b
<i>Psidium</i> x <i>durbanensis</i>	Durban guava, Durbanse koejawel (A), umgwava (Z)	1b
<i>Psidium guajava</i>	guava, koejawel (A), umgwava (Z)	a. 2 for plantations in EC, KZN, Lim, Mpm, NW. b. 3 elsewhere in EC, KZN, Lim, Mpm, NW. c. Fruit is not listed if used for human consumption. d. Not listed elsewhere.
<i>Psidium guineense</i>	Brazilian guava, Brasiliaanse koejawel (A), umgwava (Z)	1b
<i>Pueraria montana</i> var. <i>lobata</i> (= <i>P. lobata</i>)	Kudzu vine, Kudzuranker (A)	1a
<i>Pyracantha angustifolia</i>	yellow firethorn, geelbranddoring (A), undunyungu (X)	a. 1b b. Sterile cultivars or hybrids not listed. †
<i>Pyracantha coccinea</i>	red firethorn, rooibranddoring (A), undunyungu (X)	a. 1b b. Sterile cultivars or hybrids not listed. †
<i>Pyracantha crenatoserrata</i> (= <i>P. fortuneana</i> misapplied)	Chinese firethorn, broad-leaf firethorn, undunyungu (X)	a. 1b b. Sterile cultivars or hybrids not listed. †
<i>Pyracantha crenulata</i> including var. <i>rogersiana</i> (= <i>P. rogersiana</i>)	Himalayan firethorn, rooivuurddoring (A), undunyungu (X)	a. 1b b. Sterile cultivars or hybrids not listed. †
<i>Pyracantha koidzumii</i>	Formosa firethorn, undunyungu (X)	a. 1b b. Sterile cultivars or hybrids not listed. †
<i>Reynoutria sachalinensis</i> (= <i>Fallopia sachalinensis</i> , <i>Polygonum sachalinense</i>)	giant knotweed	1a
<i>Rhus glabra</i>	scarlet sumach, vinegar bush, gladde sumak (A)	3

Botanical Name	Common Names	Category/Area
<i>Ricinus communis</i>	castor-oil plant, kasterolieboom (A), umhlakuva (Z), umchakuva (X), umkakuva (X), umhlawuvuthwa (X)	2
<i>Rivina humilis</i>	rivina, bloodberry, bloedbessie (A)	1b
<i>Robinia pseudoacacia</i>	black locust, witakasia (A)	1b
<i>Rosa rubiginosa</i> (= <i>R. eglantheria</i>)	eglantine, sweetbriar, wilderoos (A)	1b
<i>Rubus cuneifolius</i> and hybrid <i>R. x proteus</i>	American bramble, Amerikaanse sandbraam (A); itshalo, elingelona elemvelo (Z); lijikijolo-elinomhobholo (Z)	1b
<i>Rubus ellipticus</i>	Asian wild raspberry, yellow Himalayan raspberry; itshalo, elingelona elemvelo (Z)	1a
<i>Rubus flagellaris</i>	American dewberry; itshalo, elingelona elemvelo (Z)	1b
<i>Rubus fruticosus</i> agg.	European blackberry, braam (A); itshalo, elingelona elemvelo (Z)	2
<i>Rubus immixtus</i>	Hogsback raspberry; itshalo, elingelona elemvelo (Z)	1b
<i>Rubus niveus</i>	Ceylon raspberry, Mysore raspberry, itshalo, elingelona elemvelo (Z)	1b
<i>Rumex acetosella</i>	sheep sorrel, red sorrel, steenboksuring (A), umhlonyana (X)	a. 1a Prince Edward and Marion Islands. b. Not listed on mainland or other off-shore islands.
<i>Rumex usambarensis</i> (= <i>R. nervosus</i> var. <i>usambarensis</i>)	East African dock, Oos-Afrikaanse tongblaar (A)	1b

Botanical Name	Common Names	Category/Area
<i>Sagina procumbens</i>	birdeye pearlwort	a. 1b Prince Edward and Marion Islands. b. Not listed on mainland or other off-shore islands.
<i>Sagittaria platyphylla</i>	slender arrowhead	1a
<i>Salsola kali</i>	tumbleweed, rolbossie (A); isinama samasimini (X)	1b
<i>Salsola tragus</i> (= <i>S. australis</i>)	Russian tumbleweed, Russiese rolbossie (A)	1b
<i>Salvia tiliifolia</i>	lindenleaf sage	1b
<i>Salvinia minima</i>	small salvinia, klein watervaring (A)	1b
<i>Salvinia molesta</i> and other species of the Family Salviniaceae	Kariba weed, salvinia, watervaring (A)	1b
<i>Sambucus canadensis</i> (= <i>S. nigra</i> subsp. <i>canadensis</i>)	Canadian elder, Kanadese vlier (A)	1b
<i>Sambucus nigra</i>	European elder, Europese vlier (A)	1b
<i>Sasa ramosa</i> (= <i>Arundinaria vagans</i>)	dwarf yellow-striped bamboo, dwerggeelstreepbamboes (A)	3
<i>Schefflera actinophylla</i>	Australian cabbage tree, Queensland umbrella tree, Australiese kiepersol (A)	a. 1b in EC, KZN, Lim, Mpm. b. Not listed elsewhere.
<i>Schefflera arboricola</i>	dwarf umbrella tree	a. 3 in EC, KZN, Lim, Mpm. b. Not listed elsewhere.
<i>Schefflera elegantissima</i> (= <i>Dizygotheca elegantissima</i>)	false aralia	a. 3 in EC, KZN, Lim, Mpm. b. Not listed elsewhere.
<i>Schinus terebinthifolia</i>	Brazilian pepper tree, Brasiliaanse peperboom (A), isihlekehleke (Z)	a. 1b in EC, KZN, Lim, Mpm. b. 3 in FS, Gau, NW, NC, WC.

Botanical Name	Common Names	Category/Area
<i>Senna bicapsularis</i> (= <i>Cassia bicapsularis</i>)	rambling cassia	1b
<i>Senna didymobotrya</i> (= <i>Cassia didymobotrya</i>)	peanut butter cassia, grond-boontjieberterkassia (A), umakhephuka (Z), bhadlalilanga (X), munwahuku (Sh)	a. 1b in EC, KZN, Lim, Mpm, WC. b. Not listed elsewhere.
<i>Senna hirsuta</i> (= <i>Cassia hirsuta</i>)	hairy senna, woolly senna	1b
<i>Senna occidentalis</i> (= <i>Cassia occidentalis</i>)	stinking weed, wild coffee, isinyembane (Z)	1b
<i>Senna pendula</i> var. <i>glabrata</i> (= <i>Cassia coluteoides</i>)	climbing cassia, Easter cassia	1b
<i>Senna septemtrionalis</i> (= <i>Cassia floribunda</i> , <i>C. laevigata</i>)	arsenic bush, smooth senna	1b
<i>Sesbania punicea</i>	red sesbania, rooisesbania (A)	1b
<i>Solanum betaceum</i> (= <i>Cyphomandra betacea</i>)	tree tomato, boomtamatie (A)	a. 3 in EC, KZN, Lim, Mpm. b. Fruit is not listed in EC, KZN, Lim, Mpm if used for human consumption. c. Not listed elsewhere.
<i>Solanum chrysotrichum</i> (<i>S. hispidum</i> misapplied in South Africa)	giant devil's fig	1b
<i>Solanum elaeagnifolium</i>	silver-leaf bitter apple, satansbos (A)	1b
<i>Solanum mauritianum</i>	bugweed, luisboom (A), ubhongabhonga (Z), isigwayana (Z), umbangabanga (X)	1b
<i>Solanum pseudocapsicum</i>	Jerusalem cherry, Jerusalemkersie (A), umthumawezinja (X), utshesi (X)	1b
<i>Solanum seafortianum</i>	potato creeper, aartappelranker (A)	1b

Botanical Name	Common Names	Category/Area
<i>Solanum sisymbriifolium</i>	wild tomato, dense-thorned bitter apple, wildetamatie (A)	1b
<i>Sorghum halepense</i>	Johnson grass, Aleppo grass, Johnsongras (A), iquangaboto (N)	2
<i>Spartina alterniflora</i>	smooth cordgrass, salt-water cordgrass	1a
<i>Spartium junceum</i>	Spanish broom, Spaanse besem (A), isitorhom esimhlophe (X)	a. 1b in EC, WC. b. 3 in FS, Gau, KZN, Lim, Mpm, NW, NC.
<i>Spathodea campanulata</i>	African flame tree, Afrikaanse vlamboom (A)	a. 3 in EC, KZN, Lim, Mpm. b. Not listed elsewhere.
<i>Sphagneticola trilobata</i> (= <i>Thelechitonina trilobata</i> , <i>Wedelia trilobata</i>)	Singapore daisy, Singapoer-madeliefie (A)	a. 1b in EC, KZN, Lim, Mpm. b. 3 in FS, Gau, NW, NC, WC.
<i>Stachytarpheta cayennensis</i> (= <i>S. urticifolia</i>)	blue snakeweed, cayenne snakeweed	3
<i>Stachytarpheta mutabilis</i>	pink snakeweed	3
<i>Stellaria media</i>	common chickweed, sterremuur (A), impontshane (X), qoqobala (S)	a. 1a Prince Edward Island. b. 1b Marion Island. c. Not listed on mainland or other off-shore islands.
<i>Syngonium podophyllum</i>	goose foot, arrowhead-vine	a. 1b in EC, KZN, Lim, Mpm. b. 2 for breeding in nurseries in EC, KZN, Lim, Mpm, but may not be transferred within these Provincial boundaries. c. Not listed elsewhere.
<i>Syzygium cumini</i>	jambolan	a. 1b b. Fruit is not listed if used for human consumption.
<i>Syzygium jambos</i>	rose apple, jamboes (A)	3

Botanical Name	Common Names	Category/Area
<i>Tamarix aphylla</i> Not to be confused with indigenous <i>Tamarix usneoides</i>	Athel tree, desert tamarisk, woestyntamarisk (A)	1b
<i>Tamarix chinensis</i> Not to be confused with indigenous <i>Tamarix usneoides</i>	Chinese tamarisk	1b
<i>Tamarix gallica</i> Not to be confused with indigenous <i>Tamarix usneoides</i>	French tamarisk, Franse tamarisk (A)	1b
<i>Tamarix ramosissima</i> Not to be confused with indigenous <i>Tamarix usneoides</i>	pink tamarisk, perstamarisk (A)	1b
<i>Tecoma stans</i>	yellow bells, geelklokkies (A)	1b
<i>Tephrocactus articulatus</i> (= <i>Opuntia articulata</i>)	pine-cone cactus, paper-spine cholla, umdolofiya (Z)	1a
<i>Thevetia peruviana</i> (= <i>Cascabela thevetia</i>)	yellow oleander, geel-oleander (A)	1b
<i>Tipuana tipu</i> (= <i>T. speciosa</i>)	tipu tree, tipoeboom (A)	3
<i>Tithonia diversifolia</i>	Mexican sunflower, Mexikaanse sonneblom (A), umbabane (Z)	1b
<i>Tithonia rotundifolia</i>	red sunflower, rooisonneblom (A)	1b
<i>Toona ciliata</i> (= <i>Cedrela toona</i>)	toon tree, toonboom (A)	3
<i>Toxicodendron succedaneum</i> (= <i>Rhus succedanea</i>)	wax tree, wasboom (A)	1b
<i>Tradescantia fluminensis</i>	white-flowered wandering Jew, witblomwandelende Jood (A)	1b

Botanical Name	Common Names	Category/Area
<i>Tradescantia zebrina</i> (= <i>Zebrina pendula</i>)	purple wandering Jew, perswandelende Jood (A)	1b
<i>Trichocereus spachianus</i> (= <i>Echinopsis spachiana</i> ; <i>E. schickendantzii</i> misapplied in South Africa)	torch cactus, orrelkactus (A), umdolofiya (Z)	1b
<i>Triplaris americana</i>	tripolaris, ant tree	1a
<i>Tropaeolum speciosum</i>	Chilean flame creeper, flame nasturtium	3
<i>Ulex europaeus</i>	European gorse, gaspeldoring (A)	1a
<i>Verbena bonariensis</i>	wild verbena, tall verbena, purple top, blouwaterbossie (A)	1b
<i>Verbena brasiliensis</i>	Brazilian verbena, slender wild verbena	1b
<i>Verbena rigida</i> (= <i>V. venosa</i>)	veined verbena, stiff verbena, iyeza lokukhupha isisu (X)	1b
<i>Vinca major</i>	greater periwinkle, gewone-opklim (A), iflawa (X)	a. 1b b. Sterile cultivars or hybrids not listed. †
<i>Vinca minor</i>	lesser periwinkle	a. 1b b. Sterile cultivars or hybrids not listed.
<i>Vitex trifolia</i>	Indian three-leaf vitex	1b
<i>Wigandia urens</i> var. <i>caracasana</i> (= <i>W. caracasana</i>)	wigandia	3
<i>Xanthium spinosum</i>	spiny cocklebur, boetebossie (A), iligcume (Z), itshungu (X), ikhakakhaka (X), hlaba-hlabane (S)	1b
<i>Xanthium strumarium</i>	large cocklebur, kankerroos (A), itshungu (X), ikhakakhaka (X), hlaba-hlabane (S)	1b

BIOLOGICAL CONTROL AGENTS FOR INVASIVE ALIEN PLANTS IN SOUTH AFRICA

The following table lists target invasive alien plants and their biological control agents which are established in South Africa. The information is according to Klein (2011) and updated in July 2018 following the 44th Annual Workshop on Biological Control of Weeds. The following definitions have been used to describe the damage inflicted to the target plant by the biocontrol agent:

Extensive: very high levels of damage; few plants survive, or growth is arrested, or almost no seeds are produced. **Considerable:** high levels of damage; some plants may survive but growth rates are noticeably slower, or seed production is reduced by more than 50 %.

Moderate: perceivable damage, but most plants survive; growth may be slowed to some extent, or seed production is reduced by less than 50 %. **Trivial:** some damage, but survival, growth and seed production of the plants is almost normal. **Unknown:** agent has been too recently released, or has not been evaluated.

AQUATIC PLANTS			
Target invasive plant & Degree of control	Biological control agent	Mode of feeding or damage & Type of organism	Damage inflicted
<i>Azolla cristata</i> (tropical red water fern), Complete	<i>Stenopelmus rufinusus</i>	leaf feeder, snout beetle	extensive
<i>Azolla filiculoides</i> (red water fern), Complete	<i>Stenopelmus rufinusus</i>	leaf feeder, snout beetle	extensive
<i>Eichhornia crassipes</i> (water hyacinth), Substantial	<i>Cercospora rodmanii</i> and <i>C. piaropi</i>	causes leaf spots, pathogen	considerable
	<i>Eccritotarsus catarinensis</i>	leaf sucker, mirid bug	considerable
	<i>Eccritotarsus eichhorniae</i>	leaf sucker, mirid bug	considerable
	<i>Megamelus scutellaris</i>	leaf sucker, mirid bug	unknown
	<i>Neochetina bruchi</i>	stem borer, snout beetle	considerable
	<i>Neochetina eichhorniae</i>	stem borer, snout beetle	considerable

Target invasive plant & Degree of control	Biological control agent	Mode of feeding or damage & Type of organism	Damage inflicted
	<i>Niphograptus albiguttalis</i>	petiole borer, moth	considerable
	<i>Orthogalumna terebrantis</i>	leaf miner, mite	considerable
<i>Hydrilla verticillata</i> (hydrilla), Substantial	<i>Parapoynx diminutalis</i> , not released; occurs locally	leaf cutter, moth	extensive
<i>Myriophyllum aquaticum</i> (parrot's feather), Complete	<i>Lysathia</i> sp.	leaf feeder, beetle	extensive
	<i>Xanthomonas campestris</i> , not released; occurs locally	causes die-back of shoots, pathogen	considerable; localised; not persistent
<i>Pistia stratiotes</i> (water lettuce), Complete	<i>Neohydronomus affinis</i>	leaf and stem borer, snout beetle	extensive
<i>Salvinia molesta</i> (salvinia), Complete	<i>Cyrtobagous salviniae</i>	stem borer, snout beetle	extensive
HERBS			
<i>Ageratina adenophora</i> (crofton weed), Negligible	<i>Passalora ageratinae</i> (= ' <i>Phaeoramularia</i> ' sp.)	causes leaf spots, pathogen	moderate
	<i>Procecidochares utilis</i>	stem galler, fruit fly	moderate
<i>Ageratina riparia</i> (creeping crofton weed), Complete	<i>Entyloma ageratinae</i>	causes leaf spots, pathogen	considerable
<i>Campuloclinium macrocephalum</i> (pompom weed), Negligible	<i>Liothrips tractabilis</i>	stem galler, thrips	moderate
	<i>Puccinia eupatorii</i> , not released; occurs locally	causes leaf spots, pathogen	moderate

Target invasive plant & Degree of control	Biological control agent	Mode of feeding or damage & Type of organism	Damage inflicted
<i>Cirsium vulgare</i> (spear thistle), Negligible	<i>Rhinocyllus conicus</i>	seed feeder, snout beetle	moderate
<i>Hypericum perforatum</i> (St John's wort), Complete	<i>Chrysolina quadrigemina</i>	leaf feeder, beetle	extensive
	<i>Zeuxidiplosis giardi</i>	shoot-tip galler, midge	moderate
<i>Parthenium hysterophorus</i> (famine weed), Under evaluation	<i>Listronotus setosipennis</i>	stem borer, snout beetle	considerable
	<i>Puccinia abrupta</i> var. <i>partheniicola</i> , not released; occurs locally	causes leaf spots, pathogen	moderate
	<i>Puccinia xanthii</i> var. <i>parthenii-hysterophorae</i> (= <i>P. melampodii</i>)	causes leaf spots, pathogen	considerable
	<i>Smicronyx lutulentus</i>	seed feeder, snout beetle	unknown
	<i>Zygogramma bicolorata</i>	leaf feeder, beetle	considerable
<i>Solanum elaeagnifolium</i> (silver-leaf bitter apple), Substantial	<i>Leptinotarsa defecta</i>	leaf feeder, beetle	moderate
	<i>Leptinotarsa texana</i>	leaf feeder beetle	extensive
SUCCULENT CLIMBERS, TREES AND SHRUBS (CACTI)			
<i>Austrocylindropuntia subulata</i> (long-spine cactus), Not determined	<i>Cactoblastis cactorum</i>	cladode borer, snout moth	unknown
<i>Cereus jamacaru</i> & <i>C. hildmannianus</i> (queen of the night cacti), Complete	<i>Hypogeococcus festerianus</i>	stem sucker, mealybug	extensive

Target invasive plant & Degree of control	Biological control agent	Mode of feeding or damage & Type of organism	Damage inflicted
	<i>Nealcidion cereicola</i> [formerly in <i>Alcidion</i>]	stem borer, longhorn beetle	considerable
<i>Cylindropuntia fulgida</i> var. <i>fulgida</i> (chain-fruit cholla), Complete	<i>Dactylopius tomentosus</i> , 'cholla' biotype	cladode sucker, cochineal/scale insect	extensive
<i>Cylindropuntia fulgida</i> var. <i>mamillata</i> (boxing-glove cactus), Complete	<i>Dactylopius tomentosus</i> , 'cholla' biotype	cladode sucker, cochineal/scale insect	extensive
<i>Cylindropuntia imbricata</i> (imbricate cactus), Substantial	<i>Dactylopius tomentosus</i> , 'imbricata' biotype	cladode sucker, cochineal/scale insect	considerable
<i>Cylindropuntia leptocaulis</i> (pencil cactus), Complete	<i>Dactylopius tomentosus</i> , 'imbricata' biotype	cladode sucker, cochineal/scale insect	extensive
<i>Harrisia bonplandii</i> (angular cactus), Substantial	<i>Hypogeococcus festerianus</i>	stem sucker, mealybug	considerable
<i>Harrisia martinii</i> (harrisia cactus), Complete	<i>Hypogeococcus festerianus</i>	stem sucker, mealybug	extensive
	<i>Nealcidion cereicola</i> [formerly in <i>Alcidion</i>]	stem borer, longhorn beetle	considerable
<i>Harrisia pomanensis</i> (devil's-rope cactus), Substantial	<i>Hypogeococcus festerianus</i>	stem sucker, mealybug	considerable
<i>Harrisia tortuosa</i> (spiny snake cactus), Substantial	<i>Hypogeococcus festerianus</i>	stem sucker, mealybug	considerable
<i>Hylocereus undatus</i> (creeping queen of the night), Not determined	<i>Hypogeococcus festerianus</i>	stem sucker, mealybug	unknown
<i>Opuntia aurantiaca</i> (jointed cactus), Substantial	<i>Cactoblastis cactorum</i>	cladode borer, snout moth	moderate

Target invasive plant & Degree of control	Biological control agent	Mode of feeding or damage & Type of organism	Damage inflicted
	<i>Dactylopius austrinus</i>	cladode sucker, cochineal/scale insect	extensive
<i>Opuntia engelmannii</i> (small round-leaved prickly pear), Negligible to Substantial, depending on variety	<i>Cactoblastis cactorum</i>	cladode borer, snout moth	trivial on large plants; moderate on small plants
	<i>Dactylopius opuntiae</i> , 'ficus' biotype	cladode sucker, cochineal/scale insect	moderate to trivial depending on climate & plant variety
	<i>Dactylopius opuntiae</i> , 'stricta' biotype	cladode sucker, cochineal/scale insect	extensive in combination with pathogen
<i>Opuntia ficus-indica</i> (sweet prickly pear), Substantial	<i>Cactoblastis cactorum</i>	cladode borer, snout moth	extensive
	<i>Dactylopius opuntiae</i> , 'ficus' biotype	cladode sucker, cochineal/scale insect	extensive
	<i>Lagocheirus funestus</i> [formerly in <i>Archlagocheirus</i>]	stem borer, longhorn beetle	trivial
	<i>Metamasius spinolae</i>	stem borer	extensive
<i>Opuntia humifusa</i> (creeping prickly pear), Complete	<i>Dactylopius opuntiae</i> , Australian ('stricta') biotype	cladode sucker, snout beetle	considerable in hot, dry regions to moderate in cooler regions and highveld
<i>Opuntia monacantha</i> (cochineal prickly pear), Complete	<i>Cactoblastis cactorum</i>	cladode borer, snout moth	considerable
	<i>Dactylopius ceylonicus</i>	cladode sucker, cochineal/scale insect	extensive

Target invasive plant & Degree of control	Biological control agent	Mode of feeding or damage & Type of organism	Damage inflicted
<i>Opuntia salmiana</i> (bur cactus), Negligible	<i>Cactoblastis cactorum</i>	cladode borer, snout moth	trivial to moderate
<i>Opuntia spinulifera</i> (large round-leaved prickly pear), Not determined	<i>Cactoblastis cactorum</i>	cladode borer, snout moth	unknown
<i>Opuntia stricta</i> (pest pear of Australia), Substantial	<i>Cactoblastis cactorum</i>	cladode borer, snout moth	extensive
	<i>Dactylopius opuntiae</i> , Australian ('stricta') biotype	cladode sucker, cochineal/scale insect	extensive
<i>Opuntia tomentosa</i> (velvet opuntia), Substantial but localised	<i>Dactylopius opuntiae</i> , 'ficus' biotype	cladode sucker, cochineal/scale insect	extensive
<i>Peniocereus serpentinus</i> (snake cactus), Not determined	<i>Hypogeococcus festerianus</i>	stem sucker, mealybug	unknown
<i>Pereskia aculeata</i> (pereskia), Under evaluation	<i>Catorhintha schaffneri</i>	stem wilter, bug	unknown
	<i>Phenrica guerini</i>	leaf feeder, beetle	extensive locally
OTHER CLIMBERS			
<i>Anredera cordifolia</i> (Madeira vine), Under evaluation	<i>Plectonycha correntina</i>	leaf feeder, beetle	trivial
<i>Caesalpinia decapetala</i> (Mauritius thorn), Negligible	<i>Sulcobruchus subsuturalis</i>	seed feeder, beetle	trivial
<i>Cardiospermum grandiflorum</i> (balloon vine), Under evaluation	<i>Cissoanthonomus tuberculipennis</i>	seed feeder, snout beetle	extensive

Target invasive plant & Degree of control	Biological control agent	Mode of feeding or damage & Type of organism	Damage inflicted
<i>Dolichandra unguis-cati</i> (cat's-claw creeper), Negligible	<i>Carvalhotingis hollandi</i>	leaf sucker, lace bug	unknown
	<i>Carvalhotingis visenda</i>	leaf sucker, lace bug	moderate
	<i>Cercosporella dolichandrae</i> ; not released, occurs locally	causes leaf spots, pathogen	moderate
	<i>Charidotis auroguttata</i>	leaf feeder, tortoise beetle	trivial
	<i>Hedwigiella jureceki</i>	leaf miner, jewel beetle	trivial
WOODY TREES AND SHRUBS			
<i>Acacia baileyana</i> (Bailey's wattle), Negligible	<i>Dasineura pilifera</i>	flower galler, midge	unknown
	<i>Melanterius maculatus</i>	seed feeder, snout beetle	moderate
<i>Acacia cyclops</i> (red eye, rooikrans), Substantial	<i>Dasineura dielsi</i>	flower galler, midge	extensive
	<i>Melanterius servulus</i>	seed feeder, snout beetle	considerable
	<i>Pseudolagarobasidium acaciicola</i> , not released; occurs locally	stem die-back, pathogen	considerable
<i>Acacia dealbata</i> (silver wattle), Negligible	<i>Dasineura pilifera</i>	flower galler, midge	unknown
	<i>Melanterius maculatus</i>	seed feeder, snout beetle	moderate
<i>Acacia decurrens</i> (green wattle), Negligible	<i>Melanterius maculatus</i>	seed feeder, snout beetle	moderate

Target invasive plant & Degree of control	Biological control agent	Mode of feeding or damage & Type of organism	Damage inflicted
Acacia longifolia (long-leaved wattle), Substantial	<i>Melanterius ventralis</i>	seed feeder, snout beetle	extensive
	<i>Trichilogaster acaciaelongifoliae</i>	bud galler, wasp	extensive
Acacia mearnsii (black wattle), Substantial	<i>Cylindrobasidium laeve</i> , not released; occurs locally; developed as cut stump inoculant "Stumpout"	causes wood rot, pathogen	extensive when applied according to label instructions
	<i>Dasineura rubiformis</i>	flower galler, midge	extensive WC; moderate EC; trivial Mp & KZN
	<i>Melanterius maculatus</i>	seed feeder, snout beetle	moderate
Acacia melanoxylon (Australian blackwood), Substantial	<i>Melanterius acaciae</i>	seed feeder, snout beetle	extensive
Acacia podalyriifolia (pearl acacia), Negligible	<i>Melanterius maculatus</i>	seed feeder, snout beetle	moderate but localised
Acacia pycnantha (golden wattle), Substantial	<i>Cylindrobasidium laeve</i> , not released; occurs locally; developed as cut stump inoculant "Stumpout"	causes wood rot, pathogen	extensive when applied according to label instructions
	<i>Melanterius maculatus</i>	seed feeder, snout beetle	moderate
	<i>Trichilogaster signiventris</i>	bud galler, wasp	considerable/ extensive
Acacia saligna (Port Jackson), Substantial	<i>Melanterius compactus</i>	seed feeder, snout beetle	considerable

Target invasive plant & Degree of control	Biological control agent	Mode of feeding or damage & Type of organism	Damage inflicted
	<i>Uromycladium morrisii</i> (previously included in <i>U. tepperianum</i>)	gall former, pathogen	extensive
Chromolaena odorata (chromolaena), Substantial	<i>Calycomyza eupatorivora</i>	leaf miner, fly	trivial
	<i>Pareuchaetes insulata</i>	leaf feeder, moth	extensive, localised
Gleditsia triacanthos (honey locust), Not determined	<i>Megabruichidius tonkineus</i> , not released; occurs locally	seed feeder, beetle	unknown
Hakea gibbosa (rock hakea), Negligible	<i>Aphanasium australe</i>	stem borer, longhorn beetle	unknown
	<i>Erytenna consputa</i>	green-fruit feeder, snout beetle	trivial
Hakea sericea (silky hakea), Substantial	<i>Aphanasium australe</i>	stem borer, longhorn beetle	unknown
	<i>Carposina autologa</i>	seed feeder, moth	trivial
	<i>Colletotrichum acutatum</i> , not released; occurs locally; developed as mycoherbicide "Hakatak"	stem gummosis disease, pathogen	extensive
	<i>Cydmaea binotata</i>	leaf & shoot borer, snout beetle	trivial
	<i>Dicomada rufa</i>	flowerbud feeder, snout beetle	unknown
	<i>Erytenna consputa</i>	green-fruit feeder, snout beetle	extensive

Target invasive plant & Degree of control	Biological control agent	Mode of feeding or damage & Type of organism	Damage inflicted
Lantana camara (lantana), Negligible (Highveld) to Substantial (coastal & Lowveld)	<i>Aceria lantanae</i>	flower galler, mite	extensive on certain varieties in some areas
	<i>Calycomyza lantanae</i>	leaf miner, fly	moderate
	<i>Coelocephalapion camarae</i>	petiole galler, snout beetle	moderate but localised
	<i>Crociosema lantana</i> [formerly in <i>Epinotia</i>]	flower miner & leafroller, moth	trivial
	<i>Falconia intermedia</i>	leaf sucker, mirid bug	moderate, localised
	<i>Hypena laceratalis</i> , not released; native	leaf feeder, moth	moderate
	<i>Lantanophaga pusillidactyla</i>	flower miner, moth	trivial
	<i>Longitarsus bethae</i>	root feeder, flea beetle	moderate, localised
	<i>Octotoma scabripennis</i>	leaf miner, beetle	considerable
	<i>Ophiomyia camarae</i>	leaf miner, fly	considerable
	<i>Ophiomyia lantanae</i>	seed miner, fly	moderate
	<i>Salbia haemorrhoidalis</i>	leaf feeder, moth	trivial
	<i>Teleonemia scrupulosa</i>	leaf & flower sucker, lace bug	considerable
	<i>Uroplata girardi</i>	leaf miner, beetle	considerable, coastal
Leptospermum laevigatum (Australian myrtle), Negligible	<i>Aristaea thalassias</i> [formerly in <i>Parectopa</i>]	leaf feeder, moth	trivial
	<i>Dasineura strobila</i>	bud galler, midge	trivial
Leucaena leucocephala (leucaena), Negligible	<i>Acanthoscelides macrophthalmus</i>	seed feeder, beetle	trivial

Target invasive plant & Degree of control	Biological control agent	Mode of feeding or damage & Type of organism	Damage inflicted
Paraserianthes lophantha (stink bean), Substantial	<i>Melanterius servulus</i>	seed feeder, snout beetle	considerable
	<i>Uromycladium woodii</i>	gall former, pathogen	unknown
Prosopis spp. (prosopis, mesquite), Negligible	<i>Algarobius prosopis</i>	seed feeder, beetle	considerable
	<i>Neltumius arizonensis</i>	seed feeder, beetle	unknown
Sesbania punicea (red sesbania), Complete	<i>Neodiplogrammus quadrivittatus</i>	stem borer, snout beetle	extensive
	<i>Rhyssomatus marginatus</i>	seed feeder, snout beetle	extensive
	<i>Trichapion lativentre</i>	flowerbud feeder, snout beetle	extensive
Solanum mauritianum (bugweed), Negligible	<i>Anthonomus santacruzi</i>	flowerbud feeder, snout beetle	trivial
	<i>Gargaphia decoris</i>	leaf sucker, lace bug	trivial, occasional outbreaks
Solanum sisymbriifolium (dense-thorned bitter apple), Substantial	<i>Gratiana spadicea</i>	leaf feeder, tortoise beetle	extensive
Tecoma stans (yellow bells), Under evaluation	<i>Mada polluta</i>	leaf feeder, ladybird beetle	moderate
	<i>Pseudonapomyza</i> sp.	leaf miner, fly	trivial
Tithonia rotundifolia (red sunflower), Under evaluation	<i>Zygogramma piceicollis</i>	leaf feeder, beetle	considerable; localised
	<i>Zygogramma signatipennis</i>	leaf feeder, beetle	considerable; localised

OTHER SOURCES OF INFORMATION

General botanical information and guides to identification

- Boon, R.** 2010. *Pooley's trees of eastern South Africa*. Flora and Fauna Publications Trust, Durban.
- Bromilow, C.** 2018. *Problem plants and alien weeds of South Africa*. Briza Publications, Pretoria.
- Dold, A.P. & Cocks, M.L.** 1999. Preliminary list of Xhosa plant names from the Eastern Cape, South Africa. *Bothalia* 29,2: 267–292.
- Glen, Hugh & van Wyk, Braam**, 2016. *Guide to trees introduced into South Africa*. Penguin Random House, Cape Town.
- Henderson, L.** 2001. *Alien weeds and invasive plants: a complete guide to declared weeds and invaders in South Africa*. Plant Protection Research Institute Handbook No.12, Agricultural Research Council, Pretoria.
- Henderson, L. & Cilliers, C.J.** 2002. *Invasive aquatic plants: a guide to the identification of the most important and potentially dangerous invasive aquatic and wetland plants in South Africa*. Plant Protection Research Institute Handbook No.16, Agricultural Research Council, Pretoria.
- Nxele, B.J., Mdletshe, B.A., Memela, B.E.B., Nxumalo, M.M., Sithole, H.J., Mlaba, P.J., Nhleko, K., Zulu, Z., Zuke, L., Mchunu, S., Hadebe, N. & Mncube, N.A.** 2019. Naming invasive alien plants into indigenous languages: KwaZulu-Natal case study, South Africa. *J. Biodiversity Management & Forestry* 8:1.
- Sochor, M., Trávíček, B. & Manning, J.C.** 2018. Biosystematic revision of the native and naturalised *Rubus* L. (Rosaceae) in the Cape Floristic Region, South Africa. *South African Journal of Botany* 118: 241–259.
- Walters, M., Figueiredo, E., Crouch, N.R., Winter, P.J.D., Smith, G.F., Zimmermann, H.G. & Mashope, B.K.** 2011. Naturalised and invasive succulents of southern Africa. *ABC Taxa* Volume 11.
- Wells, M.J., Balsinhas, A.A., Joffe, H., Engelbrecht, V.M., Harding, G. & Stirton, C.H.** 1986. A catalogue of problem plants in southern Africa. *Memoirs of the Botanical Survey of South Africa* 53.
- Witt, A. & Luke, Q.** 2017. *Guide to the naturalized and invasive plants of Eastern Africa*. CABI, Oxfordshire, UK.

Invasions and impacts

- Bolton, J.J., Andreakis, N. & Anderson, R.J.** 2011. Molecular evidence for three separate cryptic introductions of the red seaweed *Asparagopsis* (Bonnemaisoniales, Rhodophyta) in South Africa. *African Journal of Marine Science*, 33: 263–271.
- Chamier, J., Schachtschneider, K., Le Maitre, D.C., Ashton, P.J. & van Wilgen, B.W.** 2012. Impacts of invasive alien plants on water quality, with particular emphasis on South Africa. *Water SA* 38(2): 345–356.
- Clusella-Trullas, S. & Garcia, R.A.** 2017. Impacts of invasive plants on animal diversity in South Africa: A synthesis. *Bothalia* 47(2), a.2166. <https://doi.org/10.4102/abc.v47i2.2166>
- Cowling, R., van Wilgen, B., Kraaij, T. & Britton, J.** 2009. How no-man's-land is now every one's problem. *Veld & Flora* 95(3): 147–149.

- De Clerck, O., Anderson, R.J., Bolton, J.J. & Robertson-Andersson, D.** 2002. *Schimmelmannia elegans* (Gloiosiphoniaceae, Rhodophyta): South Africa's first introduced seaweed? *Phycologia* 41(2): 184-190.
- Greve, M., Mathakutha, R., Steyn, C. & Chown, S.L.** 2017. Terrestrial invasions on sub-Antarctic Marion and Prince Edward Islands. *Bothalia* 47(2), a2143. <https://doi.org/10.4102/abc.v47i2.2143>
- Henderson, L. & Wilson, J.R.U.** 2017. Changes in the composition and distribution of alien plants in South Africa: An update from the Southern African Plant Invaders Atlas, *Bothalia* 47(2), a2172. <https://doi.org/10.4102/abc.v47i2.2172>
- Le Maitre, D.C., de Lange, W.J., Richardson, D.M., Wise, R.M. & van Wilgen, B.W.** 2011. The economic consequences of environmental impacts of alien plant invasions in South Africa. In: *Biological invasions. Environmental and economic costs of alien plant, animal and microbe invasions (2nd Edition)*. Pimentel, D. (ed.). CRC Press, Boca Raton, Florida, pp. 295–323.
- Le Maitre, D.C., Forsyth, G.G., Dzikiti, S. & Gush, M.B.** 2016. Estimates of the impacts of invasive alien plants on water flows in South Africa. *Water SA* 42(4): 659–672
- Richardson, D.M. & van Wilgen, B.W.** 2004. Invasive alien plants in South Africa: how well do we understand the ecological impacts? *South African Journal of Science* 100: 45–52.
- Van Wilgen, B.W., Richardson, D.M., Le Maitre, D.C., Marais, C. & Magadlela, D.** 2001. The economic consequences of alien plant invasions: examples of impacts and approaches to sustainable management in South Africa. *Environment, Development and Sustainability* 3: 145–168.
- Wilson, J.R.U., Gaertner, M., Richardson, D.M. & van Wilgen, B.W.** 2017. Contributions to the national status report on biological invasions in South Africa. *Bothalia* 47(2), a.2207. <https://doi.org/10.4102/abc.v47i2.2207>

Websites

- Agricultural Research Council-Weeds Research:** <http://www.arc.agric.za/arc-ppri/Pages/Weeds-Research-Information-Hub.aspx>
- AlgaeBase:** www.algaebase.org/
- CABI, Invasive Species Compendium:** <http://www.cabi.org/isc/>
- Global Compendium of Weeds:** <http://www.hear.org/gcw/>
- Global Invasive Species Database:** <http://www.iucngisd.org/gisd/>
- Invasive Species South Africa:** <http://www.invasives.org.za/>
- South African National Biodiversity Institute (SANBI):**
- Botanical Database of Southern Africa (BODATSA):** <http://newposa.sanbi.org/sanbi/Explore>
- Invasive Alien Plant Alert:** <http://www.sanbi.org/information-resources/infobases/invasive-alien-plant-alert>
- The Plant List:** <http://www.theplantlist.org/>
- U.S. National Germplasm System: GRIN Taxonomy:** <https://npgsweb.ars-grin.gov/grin/global/taxonomybrowse.aspx>

Newsletters

Plant Protection News: <http://www.arc.agric.za/arc-ppri/Pages/Newsletters.aspx>

SAPIA News: <http://www.arc.agric.za/arc-ppri/Pages/Newsletters.aspx>

Invasive species training courses and workshops

South African Green Industries Council (SAGIC) provides training for invasive species consultants to the property industry. www.sagic.co.za, www.sali.co.za or www.invasives.co.za or phone 011 723 9000

Wildlife and Environment Society of South Africa (WESSA) Ecosystem Services team offers workshops, accredited and non-accredited training to facilitate NEM:BA compliance. training@wessa.co.za, 060 962 2061, 031 201 3126, www.wessa.org.za

Biological control

Agricultural Research Council-Weeds Research: Fact sheets on Invasive Alien Plants and their Biological Control Agents: <http://www.arc.agric.za/arc-ppri/Pages/Weeds-Research-Information-Hub.aspx>

Hill, M.P. & Coetzee, J. 2017. The biological control of aquatic weeds in South Africa: Current status and future challenges. *Bothalia* 47(2), a2152. <https://doi.org/10.4102/abc.v47i2.2152>.

Klein, H. 2011. A catalogue of the insects, mites and pathogens that have been used or rejected, or are under consideration, for the biological control of invasive alien plants in South Africa. *African Entomology* 19 (2): 515–549.

Klein, H. & Zimmermann, H.G. 2020. *Invasive cacti in South Africa: Their identification and control*. Plant Protection Research Handbook No. 20, Agricultural Research Council, Pretoria.

Moran, V.C., Hoffmann, J.H. & Hill, M.P. (Eds) 2011. Biological control of invasive alien plants in South Africa (1999–2010). *African Entomology* 19, Number 2 (Special Issue).

Zachariades, C., Paterson, I.D., Strathie, L.W., Hill, M.P. & van Wilgen, B.W. 2017. Assessing the status of biological control as a management tool for suppression of invasive alien plants in South Africa. *Bothalia* 47(2), a2142. <https://doi.org/10.4102/abc.v47i2.2142>.

Chemical control

Van Zyl, K. 2018. *Problem plant control compendium: a guide for the chemical control of certain declared weeds, invaders and other problem plants*. Third Edition. AVCASA, Halfway House. **Croplife:** <http://www.croplife.co.za/>

Department of Environment, Forestry and Fisheries: Natural Resources Management Programmes (DEFF: NRMP)

NRM Programmes ensure that South Africa addresses its responsibilities relating to water resource management, biological diversity and the functioning of natural systems whilst ensuring meaningful livelihood opportunities are supported for those employed on these programmes. **NRMP:** <https://www.environment.gov.za/projectsprogrammes>

NEM:BA and listed invasive species

National Environmental Management: Biodiversity Act (10/2004): Alien and Invasive Species Regulations, 2014 (GG37885 – GN 598) and amendments: <https://www.environment.gov.za/legislation/actsregulations>

Reporting of Category 1a species: invasivespecies@sanbi.org.za or invasives@sanbi.org.za

Law enforcement: Biosecurity Directorate, Department of Environment, Forestry and Fisheries, 14 Loop Street, Cape Town, 8301 or Private Bag X4390, Cape Town 8300. Toll-free number: 0800 205 005; email: Complaints@environment.gov.za

Southern African Plant Invaders Atlas (SAPIA)

SAPIA, an initiative of the ARC-Plant Health and Protection (previously Plant Protection Research Institute), was launched in 1994 and currently contains 95 000 locality records of 850 alien plant species growing outside of cultivation. Plans are being made for the SAPIA data to be made accessible at the South African National Biodiversity Institute (SANBI) website.

GLOSSARY

A

- achene**, a dry, hard, indehiscent fruit, formed from a single carpel, as in the Asteraceae.
- acorn**, the fruit of the oak (*Quercus*), composed of a nut and its basal cup.
- acute**, sharply pointed, with a short, abrupt point.
- alternate**, (of leaves), borne singly at each node, on either side of a stem.
- anther**, the part of a stamen that produces pollen.
- apex, apical**, the tip of an organ (plural: apices)
- areole**, a small pit or raised spot, often bearing a tuft of hairs or spines.
- ascending**, sloping or curving upwards.
- awn**, a hair-like or bristle-like appendage.
- axil**, the angle between a leaf and the stem to which it is attached.
- axillary**, growing in an axil.

B

- berry**, a pulpy, indehiscent, few or many-seeded fruit.
- bipinnate**, in which the pinnate divisions of a leaf are again pinnately divided.
- blade**, the flattened and often broad part of a leaf.
- bract**, (1) a reduced leaf subtending or associated with a flower; (2) a scale between the flowers in Asteraceae.
- bulbil**, small plant that forms in place of a flower on certain plants, such as in *Agave*.
- bur**, a prickly or spiny fruit, or aggregate of fruits.
- butt**, the trunk of a tree, especially the part just above the roots.

C

- calyx, calyces**, the outer whorl at the base of a flower made up of free or united sepals, usually green.
- capsule**, a dry fruit which splits open.
- catkin**, a flower cluster, normally pendulous; flowers lack petals, are often stalkless, surrounded by scale-like bracts, and are usually unisexual.
- cladode**, a stem, often flattened, with the function and appearance of a leaf.
- compound**, (of a leaf), consisting of several or many leaflets.
- cone**, the clustered flowers or woody, seed-bearing structures of a conifer.
- corolla**, the inner whorl of a flower, composed of free or united petals, usually coloured.
- corona**, a crown; circle of appendages between the corolla and stamens, often united in a ring.
- crown**, (canopy), the upper branched part of a tree.
- crustose**, as in algae.
- cyathium**, specialized inflorescence, resembling a single flower, in the genus *Euphorbia*.

D

- decumbent**, lying or growing on the ground but with erect or rising tips.
- dehiscent, -ence**, (of fruits), opening to allow the escape of the seeds.
- disc**, receptacle, for example in the flowerhead of Asteraceae, on which the flowers are borne.
- discoïd**, having only disc flowers.

donga, an eroded gully with steep sides.

drupe, a fleshy, one-seeded fruit, e.g. a peach.

E

ellipsoid, an elliptic solid.

elliptic, (of leaves), broadening in the centre and narrowing towards each end.

entire, (of leaves) with even, untoothed or unlobed margins.

F

floret, a small or reduced flower, especially one that is part of a larger inflorescence, such as those of the grasses (Poaceae) and plants of the daisy family (Asteraceae).

follicle, a fruit of one carpel, containing more than one seed, dehiscing on the ventral side, as in Apocynaceae.

forest, a natural vegetation formation type in which trees are dominant; canopies overlapping or touching.

fruiting body, reproductive structure in ferns.

fynbos, a natural vegetation formation type in which graminoids (grass-like plants belonging mainly to the Restionaceae), dwarf shrubs and shrubs or trees are dominant.

G

gland, a structure (hair, cavity etc.) secreting oil or resin; or gland-like body.

glandular, covered with glands or gland-tipped hairs.

glaucous, covered with a greyish, bluish or whitish waxy coating or bloom that is easily rubbed off.

globose, spherical.

glochid, a barbed hair or bristle.

glume, one or two empty bracts at the base of a grass spikelet; usually scale-like, stiff and dry.

grassland, a natural vegetation formation type in which grasses and herbs are dominant.

H

holdfast, a specialized structure at the base of a marine alga which acts as an "anchor" allowing it to attach to a surface.

I

impressed, pressed into; marked with slight depressions.

inflorescence, a group or cluster of flowers.

K

karoo, a natural vegetation formation type in which dwarf shrubs (often succulent) or dwarf shrubs and grasses are dominant.

keel, a projecting ridge running the length of the organ.

kloof, ravine.

L

lanceolate, (of leaves), lance-shaped, several times longer than broad and widest below the middle.

latex, a colourless or coloured, usually white or yellowish, fluid; often referred to as milky sap.

lemma, the lower of the two bracts enclosing a grass flower.

ligule, a membrane or line of hairs on the inner surface of a grass leaf at the junction between sheath and blade.

linear, (of leaves), narrow, several times longer than broad.

M

membranous, thin and transparent.

midrib, the main, central vein of a leaf.

N

node, the point on a stem where a leaf or leaves arise.

nutlet, a hard fruit, with a single seed, which does not open.

O

obconical, in the form of an inverted cone.

oblanceolate, several times longer than broad and widest above the middle; rounded at the apex, and tapering at the base.

oblong, longer than broad, and with the sides nearly or quite parallel for most of their length.

obovate, inversely ovate, broader above rather than below the middle.

opposite, (of leaves), borne two to each node, one opposite the other.

ovate, egg-shaped (a flat surface).

ovoid, egg-shaped (a solid).

P

palmate, with three or more parts arising from a single point and radiating outward like the fingers of an open hand.

panicle, a branched inflorescence in which the flowers are stalked; a panicle consists of several racemes.

petal, a part of the corolla.

phyllode, leaf-like petiole with no blade.

pinna, -ae, the primary division of a pinnate leaf; leaflet or primary leaflet has been used in this book.

pinnate, a compound leaf in which the leaflets arise on opposite sides of the rachis.

pinnatifid, a leaf cut in a pinnate manner, but the incisions do not reach the midrib.

pinnatisect, a leaf cut in a pinnate manner with the incisions reaching to or almost to the midrib.

pinnule, a secondary division of a pinnate leaf; secondary leaflet has been used in this book.

pistil, the female element in a flower, consisting of an ovary (containing ovules) bearing a style and stigma.

pod, a dehiscent, dry fruit such as in Fabaceae.

pome, the fleshy fruit typical of *Pyracantha* and related Rosaceae.

prostrate, lying flat on the ground.

R

raceme, an inflorescence consisting of a number of stalked flowers on a central axis, the lower flowers opening first.

ray-florets, the strap-shaped florets of a flower-head, as in Asteraceae.

rachis, the axis of a compound leaf (plural: rachises)

rhizome, -atous, a stem usually horizontal and below the ground, and which produces rootlets and aerial shoots.

rosette, a spreading and radiating basal cluster of leaves.

S

samara, an indehiscent, winged fruit.

savanna, a natural vegetation formation type in which trees or shrubs and grasses are dominant.

scalloped, (of a leaf), with rounded notches on the margin.

sepal, a free segment of the calyx.

septate, divided by a partition.

sheath, (of a leaf), basal part of a leaf that is wrapped around the stem.

spike, an inflorescence in which a single axis bears sessile flowers.

spikelet, a small spike in which the flowers are subtended by and enclosed in bracts; the unit of the grass inflorescence.

stamen, the male element in a flower, consisting of the filament and anther.

stigma, the female part of the flower, borne at the tip of the style, that receives pollen.

stipule, a usually small outgrowth from the stem at either side of the petiole.

stolon, a horizontally spreading or arching stem, usually above ground, which roots at its tip to produce a new plant.

striate, with fine longitudinal lines or ridges.

style, the part of the flower on which the stigma is borne.

sucker, a shoot that arises from below ground level, directly from the root or rootstock.

suture, a line of opening or dehiscence.

syncarp, a compound "fruit" composed of the massed, often more or less coalescent, fruits either of a single flower or of several flowers.

T

tendril, a thread-like structure, used to provide support.

thallus, the entire body in algae.

toothed, used in a generalized sense in this book to refer to leaf margins which are toothed in various ways.

tuber, a thickened, usually subterranean, storage organ derived from a stem or root.

tuberculate, in cacti, with rounded protuberances.

U

umbel, usually flat-topped or rounded inflorescence in which the individual flower stalks arise from a central point.

utricle, a bladderly, one-seeded, usually indehiscent fruit.

V

vlei, marsh.

W

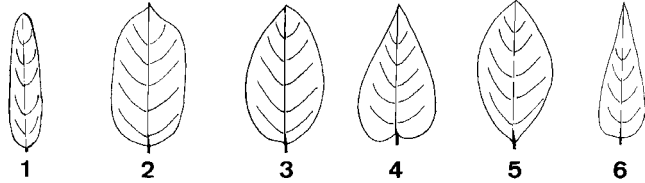
whorl, a circle of three or more leaves, flowers, or other organs at one node.

KEY TO BOTANICAL TERMS

Leaf shapes (1-6); Leaf parts (7-9); Compound leaves (8-10); Inflorescences (11-14); Flower parts (15-16); Grass spikelet (17).

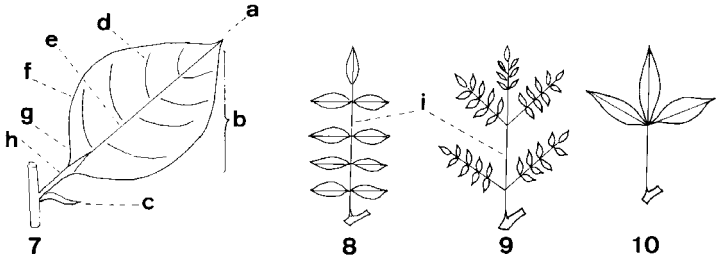
1-6: Leaf shapes

1. Linear
2. Oblong
3. Elliptic
4. Ovate
5. Obovate
6. Lanceolate



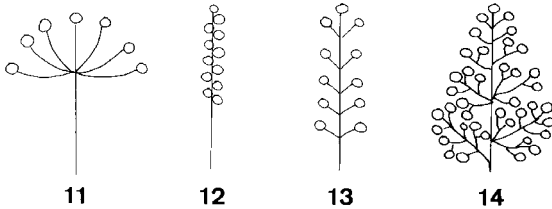
7-9: Leaf parts

- a. Apex
- b. Blade
- c. Stipule
- d. Vein
- e. Midrib
- f. Margin
- g. Base
- h. Petiole
- i. Rhachis



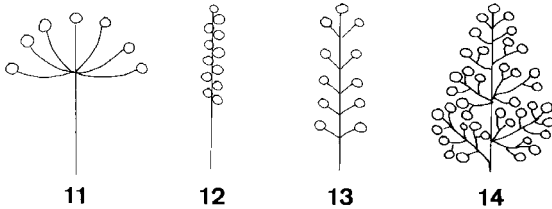
8-10: Compound leaves

8. Pinnate
9. Bipinnate
10. Trifoliate



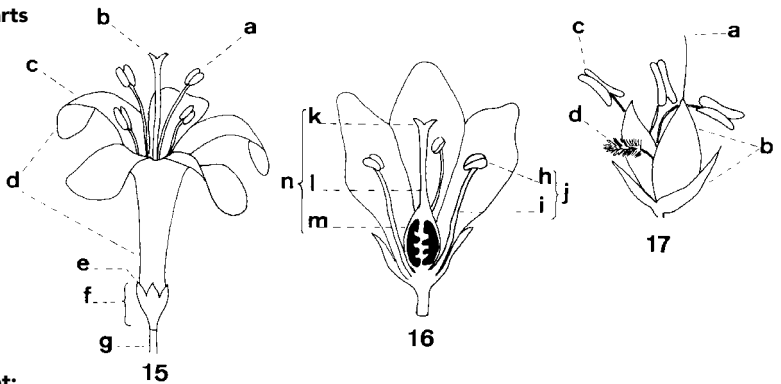
11-14: Inflorescences

11. Umbel
12. Spike
13. Raceme
14. Panicle



15-16: Flower parts

- a. Stamen
- b. Pistil
- c. Petal
- d. Corolla
- e. Sepal
- f. Calyx
- g. Pedicel
- h. Anther
- i. Filament
- j. Stamen
- k. Stigma
- l. Style
- m. Ovary
- n. Pistil



17: Grass spikelet:

- a. Awn
- b. Bracts
- c. Anther on slender filament
- d. Feathery stigma on style

INDEX OF BOTANICAL AND COMMON NAMES

Family names appear in **CAPITAL LETTERS**, botanical names in *italics*; **bold** page numbers denote full species accounts.

aarbei, wilde- 320
aarbeikoejawel 336
Aaron's-beard prickly pear 165, 331
aartappelranker 339
'Abessiniese' coleus 335
'Abyssinian' coleus 335
acacia, pearl 311
Acacia adunca **232**, 311
Acacia armata 182
Acacia baileyana **296**, 311, 349
Acacia cyclops 9, 11, **212**, 311, 349
Acacia dealbata **296**, 311, 349
Acacia decurrens **296**, 311, 349
Acacia elata **298**, 311
Acacia fimbriata **232**, 311
Acacia implexa **212**, 311
Acacia longifolia **212**, 311, 350
Acacia mearnsii 10, **298**, 311, 350
Acacia melanoxylon **214**, 311, 350
Acacia paradoxa **182**, 311
Acacia podalyriifolia **238**, 311, 350
Acacia pycnantha **214**, 311, 350
Acacia saligna 11, **214**, 312, 350, 351
Acacia stricta **233**, 312
Acacia terminalis 311
ACANTHACEAE 100, 133
Acer buergerianum **210**, 312
Acer negundo **292**, 312
ADOXACEAE 280
African flame tree 295, 340
Afrikaanse vlamboom 340
AGAVACEAE 140, 148
agave, American 140
Agave americana var. *americana* **140**

Agave americana var. *expansa* **140**, 312
Agave sisalana **140**, 312
Ageratina adenophora **82**, 312, 344
Ageratina riparia **82**, 312, 344
ageratum, indringer 312
ageratum, invading 82, 312
ageratum, Mexican 84, 312
ageratum, Mexikaanse 312
Ageratum conyzoides **82**, 312
Ageratum houstonianum **84**, 312
Agrimonia odorata 312
Agrimonia procera **96**, 312
agrimony, scented 96, 312
Agropyron repens 321
Agrostis castellana **30**, 312
Agrostis gigantea **30**, 313
Agrostis stolonifera **31**, 313
ahorn, Chinese 312
ahorn, essenblaar- 312
Ailanthus altissima **280**, 313
akasia, wit- 337
akkermonie 312
akkerwinde 318
albizia, Australian 332
Albizia lebbek **298**, 313
Albizia lophantha 332
Albizia procera **300**, 313
Aleppo grass 28, 340
Aleppo pine 174, 334
Aleppoden 334
alga, red 310
algarroba 188
Algerian ash 293, 323
Algerian ivy 132, 324
Algeriese esseboom 323
Alhagi camelorum 313
Alhagi maurorum **166**, 313

alisma, water- 313
Alisma plantago-aquatica **48**, 313
ALISMATACEAE 46, 48, 49, 50
Alocasia macrorrhizos 48
Alopecurus australis 313
Alopecurus geniculatus **31**, 313
Alpinia speciosa 313
Alpinia zerumbet **76**, 313
AMARANTHACEAE 84, 238
Amazon swordplant 50, 324
American agave 140
American ash 292, 323
American bramble 194, 337
American dewberry 196
American pokeweed 105, 333
Amerikaanse driedoring 323
Amerikaanse esseboom 323
Ammophila arenaria **20**, 313
ANACARDIACEAE 282, 290, 294
angular cactus 118, 324, 346
Anigozanthos flavidus **76**
Anredera baselloides 313
Anredera cordifolia **110**, 313, 348
ant tree 270, 342
Antigonon leptopus **110**, 313
Antirrhinum dalmaticum 327
APOCYNACEAE 72, 97, 110, 116, 226, 230, 238
apple-of-Peru 103, 330
ARACEAE 44, 48, 128, 131
aralia, false 278, 338
ARALIACEAE 132, 276, 278
Araujia sericifera **110**, 313
ardisia, shoebutton 233, 313
Ardisia crenata **216**, 313
Ardisia crispa 313
Ardisia elliptica **233**, 313

Argemone mexicana **60**, 314
Argemone ochroleuca **60**, 314
 Argentine senna 284
Aristolochia elegans 112, 314
Aristolochia littoralis **112**, 314
ARISTOLOCHIACEAE 112
 arrowhead, delta 46
 arrowhead, slender 46, 338
 arrowhead-vine 128, 340
Arundinaria vagans 338
Arundo donax 10, **20**, 314
 arsenic bush 286, 339
 ash, Algerian 293, 323
 ash, American 292, 323
 ash, European 293
 ash, green 292
 ash, narrow-leaved 293
 ash, velvet 293
 ash, white 292, 323
 ash-leaved maple 292, 312
 Asian kelp 310
 Asian mosquito fern 36, 314
 Asian wild raspberry 196, 337
Asparagopsis armata **54**, 310
Asparagopsis taxiformis **54**, 310
ASPHODELACEAE 96
Asphodelus fistulosus **96**
ASTERACEAE 60, 62, 66, 70,
 80, 84, 86, 92, 98, 99, 108,
 208, 244, 270, 272
 Athel tree 178, 341
Atriplex inflata **84**, 314
Atriplex lindleyi subsp. *inflata*
 84, 314
Atriplex nummularia subsp.
nummularia **238**, 314
 Australian albizia 332
 Australian blackwood 214, 311,
 350
 Australian brush-cherry 268
 Australian cabbage tree 338
 Australian cheesewood 226, 335
 Australian crimson oak 204, 323
 Australian myrtle 250, 326, 352
 Australian silky oak 206, 323

Australian tree fern 304
 Australian water-clover 52, 69,
 328
 Australiese kasuur 335
 Australiese kiepersol 338
 Australiese mirt 326
 Australiese rooi-eik 323
 Australiese silwerek 323
 Australiese swarthout 311
Austrocylindropuntia cylindrica
142, 314
Austrocylindropuntia subulata
142, 314, 345
 autograph tree 272
Avena barbata 32
Avena byzantina 32
Avena fatua 32
Avena sativa 32
Avena spp. **32**
Avena sterilis 32
 avocado pear 256
 azolla 314
Azolla cristata **36**, 314, 343
Azolla filiculoides **36**, 314, 343
Azolla imbricata 36, 314
Azolla mexicana 36, 314
Azolla microphylla 36, 314
Azolla pinnata subsp. *africana*
 (indigenous) 36
Azolla pinnata subsp. *asiatica*
36, 314
 Bailey's wattle 296, 311, 349
 Bailey-se-wattel 311
 balloon vine 15, 114, 316, 348
 balloon vine, lesser 114, 316
 bamboes, dwerggeelstreep- 338
 bamboo, dwarf yellow-striped
 35, 338
 banana poka 124, 332
 bananadilla 124, 332
 banksia, coastal 234
 banksia, heath 180
Banksia ericifolia **180**
Banksia integrifolia **234**
 Barbados gooseberry 126, 333

Barbadosstekelbessie 333
 barberry, Chinese 202
 barberry, Indian 202
 barberry, Japanese 203, 315
 bartlettina 272, 314
Bartlettina sordida **272**, 314
BASELLACEAE 110
 basden 333
 basterappelliefie 330
 basterlebbbeck 313
Bauhinia purpurea **204**, 315
Bauhinia variegata **204**, 315
Bauhinia variegata var. *candida*
 204
 beach she-oak 168, 316
 beefwood 168, 316
 begraaftplaasblom 316
 belhambra 258, 333
 bent grass 30, 312
 bent grass, black 30, 313
 bent grass, creeping 31, 313
BERBERIDACEAE 202, 203,
 293
 berberis, Japanse 315
Berberis aristata **202**
Berberis julianae **202**
Berberis thunbergii **203**, 315
 besem, Spaanse 340
 besemraap, klawer- 332
 bhadlalilanga 339
BIGNONIACEAE 118, 288,
 295, 300
 bilberry cactus 152, 329
Billardiera heterophylla **130**,
 315
 bindweed, field 130, 318
 bird flower 276, 318
 bird-eye pearlwort 75, 338
 bird-of-paradise flower 300, 315
 bitter apple, dense-thorned 200,
 340, 353
 bitter apple, silver-leaf 66, 339,
 345
 blaasklimop 316
 black bent grass 30, 313

black cherry 264, 335
 black locust 194, 337
 black mulberry 256
 black wattle 10, 298, 311, 350
 blackberry, European 196
 blackwood, Australian 214, 311, 350
 blasiesoutbos 314
 bleeding-heart tree 248, 325
 bloedbessie 337
 bloekom, rooi- 322
 bloekom, saligna- 322
 bloekom, 'spinekop-' 322
 bloekom, suiker- 322
 bloodberry 92, 337
 bloudissel, geelblom- 314
 bloudissel, witblom- 314
 blouduiwel 332
 bloudwergmispel 318
 blou-echium 320
 bloukomo 322
 blouwaterbossie 342
 blue broomrape 104
 blue echium 86, 320
 blue passion flower 122, 332
 blue snakeweed 108, 340
 blue trumpetvine 133
 bluebell creeper 130, 315
 blue-leaf cactus 159, 331
 bobbejaandruif 333
 bobbejaandruifboom 333
 boereturksy 331
 boetebossie 342
 bohome 312
 bohomenyana 320
 boobialla, common 224
 boomtamatie 339
BORAGINACEAE 86, 275
 Boston sword fern 69, 330
 bottlebrush, lemon 216, 316
 bottlebrush, stiff-leaved 216, 316
 bottlebrush, weeping 218, 316
 bottle-brush tree 328
 box elder 292, 312
 boxing-glove cactus 15, 146, 319, 346

braam 337
 braam, Amerikaanse sand- 337
 bramble, American 194, 337
 bramble, hybrid 198, 337
 branched broomrape 104
 branddoring, geel- 336
 branddoring, rooi- 336
 Brasiliaanse koejawel 336
 Brasiliaanse peperboom 338
BRASSICACEAE 42, 100
 Brazilian guava 266, 336
 Brazilian pepper tree 282, 338
 Brazilian verbena 342
 brem, Montpellier- 323
 brem, Skotse 319
 briar, sweet- 337
 bridal wreath 110
 Brisbane wattle 232, 311
 brittle willow 228
 broad-leaf firethorn 193, 336
 broad-leaf paperbark 237, 328
 broad-leaf toadflax 101, 327
 bromes 32
Bromus catharticus 32
Bromus commutatus 32
Bromus diandrus 32
Bromus hordeaceus 32
Bromus spp. **32**
 bronkors 329
 broom, Montpellier 276, 323
 broomrape, blue 104, 332
 broomrape, branched 104, 332
 broomrape, clover 104, 332
 broomrape, lesser 332
 broom, Scotch 166, 319
 broom, Spanish 166, 340
 brush-cherry, Australian 268
Bryophyllum daigremontianum 58
Bryophyllum delagoense **56**, 315
Bryophyllum fedtschenkoi 58
Bryophyllum gastonis-bonnierii 58
Bryophyllum pinnatum **56**, 315

Bryophyllum proliferum **58**, 315
Bryophyllum spp. 58
Bryophyllum tubiflorum 315
Buddleja davidii **234**, 315
Buddleja madagascariensis **235**, 315
BUDDLEJACEAE 234, 235
 bugweed 13, 268, 339, 353
 bunny-ears, yellow 331
 bur cactus 138, 331, 348
 bur cactus, velvet 136, 331
 burgan 236, 326
 burhead, creeping 49, 320
 butter and eggs 102, 327
 butterfly orchid tree 204, 315
 cabbage tree, Australian 338
 cabomba 38, 315
Cabomba caroliniana **38**, 315
CABOMBACEAE 38
CACTACEAE 118, 126, 134, 136, 138, 142, 144, 146, 148, 150, 152, 154, 156, 158, 160, 162, 164, 165
 cactus, angular 118, 324, 346
 cactus, bilberry 152, 329
 cactus, blue-leaf 159, 331
 cactus, boxing-glove 15, 146, 319, 346
 cactus, bur 138 331, 348
 cactus, cane 142, 314
 cactus, devil's-rope 150, 324, 346
 cactus, harrisia 150, 324, 343
 cactus, imbricate 319, 346
 cactus, jointed 134, 330, 346
 cactus, long-spine 142, 314, 345
 cactus, mamillate 319
 cactus, moon 150, 324
 cactus, pencil 164, 319, 346
 cactus, pine-cone 138, 341
 cactus, rosea 146, 319
 cactus, San Pedro 165
 cactus, saucepan 331
 cactus, serpent 162, 333
 cactus, snake 162, 333, 348

cactus, spiny blue-leaf 158
cactus, spiny snake 152, 324,
346
cactus, strangler 118, 324
cactus, teddy-bear 136, 331
cactus, torch 162, 342
cactus, velvet bur 136
Caesalpinia decapetala **112**,
315, 348
Caesalpinia gilliesii **300**, 315
Caesalpinia sepiaria 315
Californian privet 254, 326
Callisia repens **58**, 315
Callistemon citrinus **216**, 316
Callistemon linearis **216**, 316
Callistemon rigidus 216, 316
Callistemon rugulosus 216
Callistemon viminalis **218**, 316
calotropis 238, 316
Calotropis procera **238**, 316
camel thorn bush 166, 313
camphor tree 244, 318
Campuloclinium macroceph-
alum 9, **84**, 316, 344
Canadian elder 280, 338
Canadian water weed 40, 320
Canary ivy 132, 324
Canary pine 172, 333
canarybird bush 276, 318
cane cactus 142, 314
cane cholla 164, 319
canna, garden 78
Canna x generalis **78**
Canna indica **76**, 316
CANNABACEAE 240, 241
CANNACEAE 76, 78
CAPRIFOLIACEAE 97, 122
cardaria, hoary 100, 326
Cardaria draba 326
Cardiospermum grandiflorum
15, **114**, 316, 348
Cardiospermum halicacabum
114, 316
Carduus macrocephalus 316
Carduus nutans **60**, 316

Carolina fanwort 38, 315
CARYOPHYLLACEAE 74, 75
Cascabela thevetia 230, 341
cascade wattle 232, 311
cassia, climbing 128, 339
cassia, Easter 128, 339
cassia, peanut butter 284, 339
cassia, rambling 126, 339
Cassia bicapsularis 339
Cassia coluteoides 339
Cassia corymbosa 284
Cassia didymobotrya 339
Cassia floribunda 339
Cassia hirsuta 339
Cassia laevigata 339
Cassia occidentalis 339
Cassia tomentosa 286
castor-oil plant 208, 337
Casuarina cunninghamiana **168**,
316
Casuarina equisetifolia **168**, 316
CASUARINACEAE 168
Catharanthus roseus **97**, 316
cathedral bells 56, 315
cat's-claw creeper 118, 320, 349
cayenne snakeweed 340
cedar, red 172, 326
Cedrela odorata 290
Cedrela toona 341
Celtis africana (indigenous) 240
Celtis australis **240**, 317
Celtis occidentalis **240**, 317
Celtis sinensis **241**
Centranthus ruber **97**, 317
century-plant, spreading 140,
312
Ceratophyllum demersum
(indigenous) 38
Cerastium fontanum **74**, 317
cereus, night-blooming 325
Cereus hexagonus **144**, 317
Cereus hildmannianus 317, 345,
346
Cereus hildmannianus subsp.
uruguayanus **144**

Cereus jamacaru **144**, 317, 345,
346
Cereus peruvianus 317
Cereus uruguayanus 144, 317
cestrum, Chilean 218, 317
cestrum, crimson 242, 317
cestrum, orange 242, 317
Cestrum aurantiacum **242**, 317
Cestrum elegans **242**, 317
Cestrum fasciculatum 242
Cestrum laevigatum **242**, 317
Cestrum parqui **218**, 317
Cestrum purpureum 317
Cestrum species 317
cestrums 317
Ceylon raspberry 198, 337
chain-fruit cholla 146, 319, 346
chameleon plant 74, 325
chandelier plant 56, 315
cheesewood, Australian 226,
335
cheesewood, stiff-leaved 237,
335
CHENOPODIACEAE 64
cherry, black 264, 335
cherry, Jerusalem 107, 339
cherry pie 326
chickweed, common 75, 340
chickweed, common mouse-ear
74, 317
Chilean cestrum 218, 317
Chilean flame creeper 133, 342
Chileense inkbessie 317
Chinese ahorn 312
Chinese barberry 202
Chinese blinkliguster 326
Chinese elm 275
Chinese firethorn 193, 336
Chinese hollygrape 293
Chinese liguster 326
Chinese maple 210, 312
Chinese nettle tree 241
Chinese privet 252, 326
Chinese sagewood 234, 315
Chinese saliehout 315

Chinese tamarisk 178, 341
Chinese wax-leaved privet 252, 326
chir pine 176, 334
cholla, cane 164, 319
cholla, chain-fruit 146, 319, 346
cholla, paper-spine 138, 431
cholla, pink-flowered sheathed 134, 319
cholla, spiny 164, 319
Chondrilla juncea **98**, 317
Christmas tree, New Zealand 328
chromolaena 244, 317, 351
Chromolaena odorata **244**, 317, 351
Cinnamomum camphora **244**, 318
Cirsium lanceolatum 318
Cirsium vulgare **62**, 318, 345
climbing cassia 128, 339
clover broomrape 104
CLUSIACEAE 272
Clusia rosea **272**
cluster pine 11, 174, 334
coastal banksia 234
cochineal prickly pear 331, 347
cocklebur, large 66, 342
cocklebur, spiny 66, 342
coleus, 'Abessiniese' 335
coleus, 'Abyssinian' 335
Coleus grandis 335
Colocasia esculenta **48**
COMMELINACEAE 58, 70, 72
common boobialla 224
common chickweed 75, 340
common dodder 116, 319
common hackberry 240, 317
common mouse-ear chickweed 74, 317
common mulberry 256, 328
common mullein 109
common privet 254, 327
common scouring-rush 321
common thorn apple 64, 319

common toadflax 102, 327
CONVOLVULACEAE 116, 120, 130, 250
Convolvulus arvensis **130**, 318
coral bush 216, 313
coral creeper 110, 313
coralberry tree 216, 313
cordgrass, salt-water 28, 340
cordgrass, smooth 28, 340
coreopsis 86, 318
Coreopsis lanceolata **86**, 318
Cortaderia jubata **22**, 318
Cortaderia selloana **22**, 318
cotoneaster, Himalayan 247, 318
cotoneaster, late 246, 318
cotoneaster, orange 246, 318
cotoneaster, oranje 318
cotoneaster, silver-leaf 247, 318
cotoneaster, Simon's 318
Cotoneaster franchetii **246**, 318
Cotoneaster glaucophyllus **246**, 318
Cotoneaster pannosus **247**, 318
Cotoneaster salicifolius **235**, 318
Cotoneaster simonsii **247**, 318
cotton-leaf physic nut 206, 326
couch grass 33, 321
crack willow 228
CRASSULACEAE 56, 58
creeping bent grass 31, 313
creeping burhead 49, 320
creeping crofton weed 82, 312, 344
creeping inch plant 58, 315
creeping knotweed 70, 333
creeping prickly pear 136, 331, 347
creeping queen of the night 118, 325, 346
creeping red fescue 33, 323
crimson cestrum 242
crimson oak, Australian 204, 323
crofton weed 82, 312, 344
crofton weed, creeping 82, 312, 344

Crotalaria agatiflora **276**, 318
Cryptostegia grandiflora **116**, 319
Cryptostegia madagascariensis **116**, 319
CUCURBITACEAE 131
CUPRESSACEAE 172
Cuscuta campestris **116**, 319
Cuscuta suaveolens **116**, 319
Cyathea australis 304
Cyathea brownii 304
Cyathea capensis (indigenous) 304
Cyathea cooperi **304**
Cyathea dregei (indigenous) 304
CYATHEACEAE 304
Cylindropuntia fulgida var. *fulgida* **146**, 319, 346
Cylindropuntia fulgida var. *mamillata* 15, **146**, 319, 346
Cylindropuntia imbricata **148**, 319, 346
Cylindropuntia leptocaulis **164**, 319, 346
Cylindropuntia pallida **134**, 319
Cylindropuntia rosea 134, 319
Cylindropuntia spinosior **164**, 319
Cylindropuntia tunicata 134
Cyphomandra betacea 268, 339
Cytisus candicans 323
Cytisus monspessulanus 323
Cytisus scoparius 166, 319
daisy, Singapore 70, 340
Dalmation toadflax 101, 327
Datura ferox **62**, 319
Datura innoxia **62**, 319
Datura stramonium **64**, 319
delta arrowhead 46
den, Aleppo- 334
den, bas- 333
den, Kanariese 333
den, loblolly- 334
den, radiata- 334
den, tjir- 334

den, treur- 334
den, tros- 334
dense water weed 38, 320
dense-thorned bitter apple 200, 340, 353
desert tamarisk 178, 341
devil's beard 97, 317
devil's fig, giant 339
devil's ivy 131
devil's pumpkin 124, 332
devil's-rope cactus 150, 324, 346
dewberry, American 196
Dicksonia antarctica 304
Diplocyclos palmatus **131**, 320
dissel, speer- 318
Dizygotheca elegantissima 338
dock, East African 226, 337
dock, velvet 109
dodder, common 116, 319
dodder, gewone 319
dodder, lucerne 116, 319
dodder, lusern- 319
Dolichandra unguis-cati **118**, 320, 349
downy senna 286
downy thorn apple 62, 319
dragon fruit 118, 325
driedoring, Amerikaanse 323
drooping prickly pear 331
Duchesnea indica **49**, 320
Duranta erecta **182**, 320
Duranta plumieri 320
Duranta repens 320
Durban guava 264, 336
Durbanse koejawel 336
Dutchman's pipe 314
dwarf umbrella tree 278, 338
dwarf yellow-striped bamboo 35, 338
dwerggeelstreepbamboes 338
dwergmispel, blou 318
dwergmispel, silwer- 318
East African dock 226, 337
Easter cassia 128, 339
Echinodorus cordifolius **49**, 320

Echinodorus tenellus 50, 320, 324
Echinopsis pachanoi 165
Echinopsis schickendantzii 162, 320, 342
Echinopsis spachiana 162, 342
echium, blou- 320
echium, blue 86, 320
echium, pers- 320
Echium lycopsis 320
Echium plantagineum **86**, 320
Echium vulgare **86**, 320
edible fig 210
Egeria densa **38**, 320
eglantine 194, 337
Eichhornia crassipes 10, **13**, **38**, 320, 343, 344
elder, box 292, 312
elder, Canadian 280, 338
elder, European 280, 338
elephant grass 26, 333
elephant's-ear 48
elm, Chinese 275
elm, English 275
Elodea canadensis **40**, 320
Elodea densa 320
Elymus repens **33**, 321
Elytrigia repens 33, 321
empress tree 274, 332
Engelse hederia 324
English ivy 132, 324
English oak 211
Epipremnum aureum **131**
Epipremnum pinnatum cv.
Aureum 131
EQUISETACEAE 98
Equisetum hyemale **98**, 321
Equisetum ramosissima
(indigenous) 98
erect sword fern 68, 329
Eriobotrya japonica **248**, 321
Eriocereus martinii 324
esseboom, Algeriese 323
esseboom, Amerikaanse 323
essenblaarahorn 312

Eucalyptus camaldulensis **218**, 322
Eucalyptus cladocalyx **220**, 322
Eucalyptus conferruminata **220**, 322
Eucalyptus diversicolor **220**, 322
Eucalyptus grandis **222**, 322
Eucalyptus lehmannii 220, 322
Eucalyptus saligna 322
Eucalyptus tereticornis **222**, 322
Eugenia australis 268
Eugenia uniflora **248**, 323
Eupatorium adenophorum 312
Eupatorium atrorubens 272, 314
Eupatorium macrocephalum 316
Eupatorium odoratum 317
Eupatorium riparium 312
Eupatorium sordidum 272, 314
Euphorbia esula **99**, 323
Euphorbia ingens (indigenous) 144, 152
Euphorbia leucocephala **236**, 323
Euphorbia x pseudovirgata 323
Euphorbia tommasiniana 323
Euphorbia virgata 323
EUPHORBIACEAE 99, 206, 208, 211, 236, 248
European ash 293
European blackberry 196
European elder 280, 338
European gorse 181, 342
European hackberry 240, 317
Europese vlier 338
evening-primroses 90
FABACEAE 112, 126, 128, 166, 181, 182, 186, 188, 194, 204, 212, 214, 232, 233, 238, 276, 284, 286, 288, 290, 295, 296, 298, 300, 302
FAGACEAE 211
Fallopia sachalinensis 274, 323, 336
false alalia 278, 338

false leebbeck 300, 313
famine weed 12, 92, 332, 345
fanwort, Carolina 315
feathertop 28, 333
fern, Australian tree 304
fern, Boston sword 69
fern, erect sword 68
fern, ladder sword 68
fern, rabbit's-foot 69, 333
fern, sword 69
fescue, red 33, 323
fescue, red creeping 33, 323
Festuca rubra **33**, 323
Ficus carica **210**
field bindweed 130, 318
fig, edible 210
firethorn, broad-leaf 193, 336
firethorn, Chinese 193, 336
firethorn, Formosa 193, 336
firethorn, Himalayan 190, 336
firethorn, red 193, 336
firethorn, yellow 190, 336
flame creeper, Chilean 133
flame nasturtium 133, 342
flame tree, African 340
Flaveria bidentis **99**, 323
floating-heart, yellow 330
FLORIDEOPHYCEAE 54
fluweelprosopis 335
forest inkberry 105, 333
forest red gum 222, 322
forget-me-not tree 182, 320
Formosa firethorn 193, 336
Formosa lelie 327
Formosa lily 88, 327
fountain grass 11, 26, 333
four-o'clock 88, 328
foxtail, marsh 31, 313
foxtail, water 31, 313
Franse tamarisk 341
Fraxinus americana **292**, 323
Fraxinus angustifolia **293**, 323
Fraxinus excelsior 293
Fraxinus pennsylvanica 292
Fraxinus velutina 293

French tamarisk 178, 341
fringed water lily 53, 330
fringed wattle 232, 311
Furcraea foetida **148**, 323
Furcraea selloa 148
garden canna 78
garingboom 140
gaspeldoring 342
gaura, wavy-leaf 330
Gaura lindheimeri 90
Gaura sinuata 90, 330
Gaura spp. 90
gebrokehartjieboom 325
geel iris 325
geel waterlelie 330
geelblom-bloudissel 314
geelbranddoring 336
geelgemmerlelie 324
geelklits 312
geelklokkies 341
geel-oleander 341
gemmerlelie, geel- 324
gemmerlelie, kahili- 324
gemmerlelie, rooi- 324
gemmerlelie, wit- 324
Genista monspessulana **276**,
323
Genista scoparia **166**, 319
gewone dodder 319
gewone liguster 327
gewone moerbeï 328
gewone stinkblaar 319
gewone-opklim 342
giant devil's fig 200, 339
giant knotweed 274, 336
giant milkweed 238, 316
giant reed 10, 20, 314
giant sensitive plant 186, 328
giant taro 48
ginger lily, kahili 80, 324
ginger lily, red 78, 324
ginger lily, white 78, 324
ginger lily, yellow 80, 324
gladde sumak 336
Gleditsia triacanthos **182**, 323,

351

GLOIOSIPHONACEAE 55

glory bush, purple 270
Glyceria aquatica 323
Glyceria maxima **22**, 323
golden pothos 131
golden wattle 214, 311, 350
goldenrods 108
goose foot 128, 340
gooseberry, Barbados 126, 333
gorse, European 181, 342
goudwilger 312
gouewattel 311
granadilla, purple 332
granadina 124, 332
gras, Johnson- 340
gras, Kikoejoe- 333
gras, nassella-pol- 329
gras, olifants- 333
gras, Pampas- 318
gras, pronk- 333
gras, silwer- 22, 318
gras, veer- 333
gras, witpol- 329
grass, Aleppo 28, 340
grass, bent 30, 312
grass, black bent 30, 313
grass, couch 33, 321
grass, creeping bent 31, 313
grass, elephant 26, 333
grass, fountain 11, 26, 333
grass, Johnson 28, 340
grass, Kentucky blue- 335
grass, Kikuyu 26, 333
grass, Marram 20, 313
grass, Napier 26, 333
grass, Pampas 22, 318
grass, purple Pampas 318
grass, reed meadow 22, 323
grass, reed sweet 22, 323
grass, salt-water cord- 28, 340
grass, smooth cord- 28, 340
greater periwinkle 72, 342
green ash 292
green mother of millions 58, 315

green wattle 296, 311, 349
 grenadella 332
 grenadella, sier- 332
 grevillea, rosemary 180, 323
Grevillea banksii **204**, 323
Grevillea robusta **206**, 323
Grevillea rosmarinifolia **180**, 323
 grey poplar 15, 260, 335
 gringed water lily 330
 groenhaarboom, Mexikaanse 332
 groenwattel 311
 grondboontjebotterkassia 339
 grootrondeblaarturksvy 331
 grootstinkblaar 319
 guava 266, 336
 guava, Brazilian 266, 336
 guava, Durban 264, 336
 guava, strawberry 264, 336
 guavadilla 122, 332
 gum, forest red 222, 322
 gum, river red 218, 322
 gum, rose 222, 322
 gum, saligna 222, 322
 gum, 'spider' 220, 322
 gum, sugar 220, 322
 haaspoetvaring 333
 hackberry, common 240, 317
 hackberry, European 240, 317
HAEMODORACEAE 76
 hairy senna 284, 339
 hakea, harige 324
 hakea, rock 170, 324, 351
 hakea, silky 170, 324, 351
 hakea, soet- 324
 hakea, sweet 170, 324
 hakea, syerige 324
 hakea, wilger- 324
 hakea, willow 222, 324
Hakea drupacea **170**, 324
Hakea gibbosa **170**, 324, 351
Hakea salicifolia **222**, 324
Hakea sericea **170**, 324, 351
Hakea suaveolens 170, 324
 Hall's honeysuckle 122, 327

HALORAGACEAE 42
 harige hakea 324
 harige stinkblaar 319
 harpoon weed 54, 310
Harrisia balansae 118, 324
Harrisia bonplandii **118**, 324, 346
 harrisia cactus 150, 324, 343
Harrisia martinii **150**, 324, 346
Harrisia pomanensis **150**, 324, 346
Harrisia tortuosa **152**, 324, 346
 heath banksia 180
 hедера, Engelse 324
Hedera canariensis **132**, 324
Hedera helix **132**, 324
Hedera helix subsp. *canariensis* 324
Hedera helix subsp. *helix* 324
Hedychium coccineum **78**, 324
Hedychium coronarium **78**, 324
Hedychium flavescens **80**, 324
Hedychium flavum 80, 324
Hedychium gardnerianum **80**, 324
Helanthium tenellum **50**, 324
 hemelboom 313
 hemp, Mauritian 323
 hemp, sisal 312
 Henry's St John's wort 250
 heuningprosopis 335
 Himalayan cotoneaster 318
 Himalayan firethorn 190, 336
 hlaba 318
 hlaba-hlabane 342
 hoary cardaria 100, 326
 Hogsback raspberry 198, 337
 hollygrape, Chinese 293
Homalanthus populifolius **248**, 325
 honey locust 182, 323, 351
 honey mesquite 12, 188, 335
 honey myrtle, rough-barked 181
 honeysuckle, Hall's 122, 327
 honeysuckle, Japanese 122, 327

hop wattle 233, 312
 horsetail, rough 98, 321
 horsetail tree 168, 316
Houttuynia cordata **74**, 325
 hybrid bramble 198, 337
 hydrilla 40, 325, 344
Hydrilla verticillata **40**, 325, 344
HYDROCHARITACEAE 38, 40
Hydrocleys nymphoides **50**, 325
Hylocereus undatus **118**, 325, 346
HYPERICACEAE 88, 250, 273
Hypericum androsaemum **273**, 325
Hypericum perforatum **88**, 325, 345
Hypericum pseudohenryi **250**
Hypericum revolutum (indigenous) 250
Hypericum roeperianum (indigenous) 250
Hypoestes phyllostachya **100**
 Hyssop loosestrife 52, 327
 ibhudabhutha 319
 icilongo 327
 idywabasi 311
 iflawa 342
 iguzu lezenga 330
 ihleza 335
 ijakhalanda 325
 ijalamu 325
 ijoye 319
 ikhakhaka 342
 ikhakhakhaka 318
 ikhamanga 312
 ikritsi 314
 iligcume 342
 iloyi 319
 imbotyi kasathana 325
 imbricate cactus 319, 346
 imbricate prickly pear 148, 319, 331, 346
 imbune 328
 impangapanga 333
 impinda 313

impontshane 340
 Indian barberry 202
 Indian laurel 256, 327
 Indian shot 76, 316
 Indian three-leaf vitex 278, 342
 Indiese kanna 316
 Indiese lourier 327
 indigo berry 124, 332
 indringer-ageratum 312
 inkatshu 328
 inkberry 242, 317
 inkberry, forest 105, 333
 inkbessie 317
 inkbessie, Chileense 317
 inkbos 333
 intelezi yobushwa 315
 intshebe yebhokhwe 317
 invading ageratum 82, 312
Ipomoea alba **120**, 325
Ipomoea carnea subsp. *fistulosa* **250**, 325
Ipomoea congesta 325
Ipomoea fistulosa 325
Ipomoea indica **120**, 325
Ipomoea purpurea **120**, 325
 iputshutshu 328
 iquangaboto 340
 iqunube 328
 iqwangu qwangu 330
 iralibhom 312
 irhabom 323
IRIDACEAE 51
 iris, geel 325
Iris pseudacorus **51**, 325
 iseringe 328
 isidungamsi 333
 isigwayana 339
 isihlekehleke 338
 isinama samasimini 338
 isitorhom esimhlophe 340
 itolofiya 330, 331, 332
 itshalo, elingelona elemvelo 337
 itshalo, elingelona elomdabu 328
 itshungu 342

ivatali 329
 ivumbangwe 319
 ivy, Algerian 132, 324
 ivy, Canary 132, 324
 ivy, English 132, 324
 ivy, Madeira 132, 324
 iwatile 311
 iwatlisi 311
 iwintili 311
 iyeza lokukhupha isisu 342
 iyeza lomgqwaliso 312
 jacaranda 274, 300, 325
Jacaranda mimosifolia **300**, 325
 jakaranda 325
 jamboes 340
 jambolan 230, 340
 Japanese barberry 203, 315
 Japanese honeysuckle 122, 327
 Japanese pagoda tree 295
 Japanese wax-leaved privet 254, 326
 Japane berberis 315
 Japane blinkliguster 326
 Japane kanferfoelie 327
Jatropha curcas **211**, 326
Jatropha gossypifolia **206**, 326
 Jerusalem cherry 107, 339
 Jerusalem thorn 186, 332
 Jerusalemkersie 339
 jessamine, orange 294, 329
 Johanneskruid 325
 Johnson grass 28, 340
 Johnsongras 340
 jointed cactus 134, 330, 346
 jongsnoekkruid 335
JUNCEAE 34
Juniperus virginiana **172**, 326
 kabelturksvy 319, 331
 kahili ginger lily 80, 324
 kahiligemmerlelie 324
 kaktus, langdoring- 314
 kaktus, litjies- 330
 kaktus, orrel- 342
 kaktus, rosea- 319
 kaktus, tou- 324

Kalanchoe delagoensis 315
Kalanchoe pinnata 56, 315
Kalanchoe proliferum 58, 315
Kalanchoe tubiflora 56, 315
 Kaliforniese liguster 326
 kameeldoringbos 313
 Kanadese vlier 338
 Kanadese waterpes 320
 Kanariese den 333
 kandelaarplant 315
 kanferboom 318
 kanferfoelie, Japanse 327
 kangaroo paw, tall 76
 kangaroo thorn 182, 311
 kangaroo wattle 311
 kankerroos 342
 kanna, Indiese 316
 Kariba weed 338
 karie 322
 karmosynsestrum 317
 karo 237, 335
 karri 322
 kassia, grondboontjiebotter- 339
 kasterolieboom 337
 kasuarisboom 316
 kasuur, Australiese 335
 kasuur, stywebelaar- 335
 katteklouranker 320
 kelp, Asian 310
 Kentucky bluegrass 35, 335
 kersie, Jerusalem- 339
 kersie, swart- 335
 kiepersol, Australiese 338
 kiesieblaar 327
 kiesieblaar, mak 327
 Kikoejoegras 333
 Kikuyu grass 26, 333
 klawerbesemraap 332
 klein watervaring 338
 kleinrondeblaarturksvy 331
 knooppkruid 333
 knotweed, creeping 70, 333
 knotweed, giant 274, 336
 koejawel 336
 koejawel, aarbei- 336

koejawel, Brasiliaanse 336
koejawel, Durbanse 336
koraalbessieboom 313
koraalklimop 313
kraaldoring 315
kruipende turksvy 331
kudzu vine 126, 336
kudzuranker 336
Kunzea ericoides **236**, 326
ladder sword fern 68, 329
Lagarosiphon species
(indigenous) 38, 40
LAMIACEAE 106, 107, 278
langblaarwattel 311
langdoringkaktus 314
lantana 184, 326, 352
Lantana 12, 184, 326
Lantana camara 12, **184**, 352
Lantana montevidensis 184
Lantana "montevidensis" cv.
Sundancer 184
Lantana Red 184
Lantana trifolia 184
Lantana White 184
Lantana Yellow 184
large cocklebur 66, 342
large round-leaved prickly pear
158, 331, 348
large thorn apple 62, 319
large-flowered prickly pear, 331
late cotoneaster 318
LAURACEAE 244, 256
laurel, Indian 256, 327
Lavatera arborea 327
leafy spurge 99, 323
lebbeck, baster- 313
lebbeck, false 300, 313
lebbeck tree 298, 313
lebbeckboom 313
lechoe 319
lekhala 312
lilie, Formosa 327
lemoenperdestert 316
lemon bottlebrush 216, 316
leoka 323

Lepidium draba **100**, 326
Leptospermum ericoides 326
Leptospermum laevigatum **250**,
326, 352
lesser balloon vine 114, 316
lesser broomrape 332
lesser periwinkle 72, 342
lethsome 319
leucaena 302, 326, 352
Leucaena glauca 326
Leucaena leucocephala **302**,
326, 352
liguster, Chinese 326
liguster, gewone 327
liguster, Japanse blink- 326
liguster, Kaliforniese 326
Ligustrum japonicum **254**, 255,
326
Ligustrum lucidum **252**, 255,
326
Ligustrum ovalifolium **254**, 255,
326
Ligustrum sinense **252**, 255, 326
Ligustrum vulgare **254**, 255, 327
lijikijolo-elinomhobholo 337
LILIACEAE 88
Lilium formosanum **88**, 327
Lilium longiflorum 88
Lilium longiflorum var.
formosanum 327
lily, Formosa 88, 327
Limnanthemum peltatum 330
Limonium sinuatum **101**, 327
limu kohu 54, 310
Linaria dalmatica **101**, 327
Linaria genistifolia subsp. *dal*
matica 327
Linaria vulgaris **102**, 327
lindenleaf sage 107, 338
litjieskaktus 330
Litsea glutinosa **256**, 327
Litsea sebifera 327
loblolly pine 176, 334
loblollyden 334
Lochnera rosea 316

locust, black 194, 337
locust, honey 182, 323, 351
Lolium x hybridum 34
Lolium multiflorum 34
Lolium perenne 34
Lolium rigidum 34
Lolium spp. **34**
Lolium temulentum 34
lollipop-climber 131, 320
Lombardy poplar 262
longifolia pine 176, 334
long-leaved wattle 212, 311,
350
long-spine cactus 142, 314, 345
Lonicera japonica 'Halliana'
122, 327
loosestrife, Hyssop 52, 327
loosestrife, purple 40, 327
loquat 248, 321
lourier, Indiese 327
lucerne dodder 116
Ludwigia octovalvis (indigenous)
51
Ludwigia peruviana **51**, 327
luisboom 339
luisiesturksvy 331
lukwart 321
luserndodder 116
Luzula multiflora **34**, 327
LYTHRACEAE 40, 52
Lythrum hyssopifolia **52**, 327
Lythrum salicaria **40**, **327**
maanblom 325
Macfadyena unguis-cati 118,
320
Madagascar periwinkle 97, 316
Madagascar rubber vine 319
Madagascar sagewood 235, 315
Madagaskarsaliehout 315
Madeira ivy 132, 324
Madeira klimop 324
Madeira ranker 313
Madeira vine 110, 313, 348
madeliefie, Singapoer- 340
madumbe 48

mafuredonga 326
Mahonia lomariifolia 293
Mahonia oiwakensis **293**
mak kiesieblaar 327
makonde 314, 319, 330, 331,
332
mallow 102, 327
mallow, tree 206, 327
Malva arborea **206**, 327
Malva dendromorpha 206, 327
Malva verticillata **102**, 327
MALVACEAE 102, 206
malvastrum, prickly 103, 328
Malvastrum coromandelianum
103, 328
mamillate cactus 319
manatoka 224, 329
manatoka, New Zealand 224,
329
manatoka, Nieu-Seelandse 329
maple, ash-leaved 292, 312
maple, Chinese 210, 312
Marram grass 20, 313
marsh foxtail 31, 313
Marsilea mutica **52**, 69, 328
MARSILEACEAE 52, 69
marvel-of-Peru 328
match poplar 262
Mauritian hemp 148, 323
Mauritius thorn 112, 315, 348
Melaleuca citrina 216
Melaleuca hypericifolia **273**, 328
Melaleuca linearis 216
Melaleuca parvistaminea **181**
Melaleuca quinquenervia **237**,
328
Melaleuca viminalis 218
MELASTOMATACEAE 270
Melia azedarach **302**, 328
MELIACEAE 290, 302
MENYANTHACEAE 53
mesquite 353
mesquite, honey 12, 188, 335
mesquite, velvet 188, 335
Metrosideros excelsa **256**, 328

Metrosideros tomentosa 328
Mexican ageratum 84, 312
Mexican poppy, white-flowered
60, 314
Mexican poppy, yellow-flowered
60, 314
Mexican sunflower 208, 341
Mexikaanse ageratum 312
Mexikaanse groenhaarboom
332
Mexikaanse sonneblom 341
midnight-lady 150, 324
milkweed, giant 238, 316
mimosa, vaal- 311
Mimosa pigra **186**, 328
Mirabilis jalapa **88**, 328
mirt, Australiese 326
misblom 312
mission prickly pear 331
mistflower 82, 312
moerbeï, gewone 328
moerbeï, wit- 328
mohlafotha 330
Montanoa hibiscifolia **208**, 328
Monterey pine 176, 334
Montpellier broom 276, 323
Montpellierbrem 323
moon cactus 150, 324
moonflower 120, 325
MORACEAE 210, 256
morning glory 120, 325
morning-glory, wild 318
morning-glory bush 250, 325
Morus alba **256**, 328
Morus nigra 256
mosquito fern, Asian 36, 314
moth catcher 110, 313
mother of millions 56, 315
mother of millions, green 58,
315
motvanger 313
mud plantain 48, 313
mufufu 333
mulberry, black 256
mulberry, common 256, 328

mulberry, white 256, 328
mullein, common 109
multiflora rose 203
munwahuku 339
Murraya exotica 294, 329
Murraya paniculata **294**, 329
Myoporum insulare **224**, 329
Myoporum laetum **224**, 329
Myoporum montanum **224**, 329
Myoporum tenuifolium subsp.
montanum 224, 329
Myriophyllum aquaticum **42**,
329, 344
Myriophyllum spicatum **42**, 329
MYRTACEAE 181, 216, 218,
220, 222, 230, 236, 237, 248,
250, 256, 264, 268, 273
Myrtillocactus geometrizans
152, 329
myrtle, Australian 250, 326, 352
Mysore raspberry 198, 337, 337
Mysore thorn 112, 315
naboom (indigenous) 144
nagblom 317
Napier grass 26, 333
nardoo 52, 69, 328
narrow-leaved ash 293
Nassella tenuissima **24**, 329
Nassella trichotoma **24**, 329
nassella tussock 24, 329
nassella-polgras 329
nasturtium, flame 133, 342
Nasturtium officinale **42**, 329
NEPHROLEPIDACEAE 68, 69
Nephrolepis cordifolia **68**, 329
Nephrolepis exaltata **69**, 330
Nerium oleander **226**, 330
netelboom 317
nettle tree 240, 317
nettle tree, Chinese 241
New Zealand Christmas tree
256, 328
New Zealand manatoka 224, 329
Nicandra physalodes **103**, 330
Nicotiana glauca **258**, 330

Nieu-Seelandse manatoka 329
Nieu-Seelandse perdestert 328
night-blooming cereus 325
nodding thistle 60, 316
ntsoantsane 314
Nuphar lutea **53**, 330
Nuphar minor 330
Nuphar sericea 330
Nuphar spathulifera 330
Nuphar tenella 330
NYCTAGINACEAE 88
Nyctocereus serpentinus 162,
333
Nymphaea lutea 330
Nymphaea mexicana **44**, 330
Nymphaea umbilicalis 330
NYMPHAEACEAE 44, 53
Nymphoides peltata **53**, 330
Nymphoides thunbergiana
(indigenous) 53
Nymphozanthus luteus 330
Nymphozanthus sericeus 330
Nymphozanthus vulgaris 330
oak, English 211
oats, wild 32
Oenothera biennis 90
Oenothera glazioviana 90
Oenothera jamesii 91
Oenothera lindheimeri 90, 91
Oenothera rosea 91
Oenothera sinuosa 90, 91, 330
Oenothera spp. **90**
Oenothera stricta 91
old man saltbush 238, 314
OLEACEAE 252, 254, 255, 292,
293
oleander 226, 330
oleander, geel- 341
oleander, yellow 230, 341
olifantsgras 333
ONAGRACEAE 51, 90
onion weed 96
Oos-Afrikaanse tongblaar 337
opuntia, velvet 160, 332, 348
Opuntia articulata 341

Opuntia aurantiaca **134**, 330,
346, 347
Opuntia compressa 330
Opuntia cylindrica 142, 314
Opuntia dillenii 332
Opuntia elata **154**, 330
Opuntia engelmannii **144**, 331,
347
Opuntia exaltata 142, 314
Opuntia ficus-indica **156**, 331,
347
Opuntia fulgida 146, 319
Opuntia humifusa **136**, 331, 347
Opuntia imbricata 148, 319
Opuntia lindheimeri 144, 331
Opuntia leucotricha **165**, 331
Opuntia megacantha 331
Opuntia microdasys **136**, 331
Opuntia monacantha **156**, 331,
347
Opuntia pestifer 331
Opuntia pubescens **136**, 331
Opuntia robusta **158**, 331
Opuntia rosea 146, 319
Opuntia salmiana **138**, 331, 348
Opuntia spinulifera **158**, 331,
348
Opuntia stricta var. *dillenii* **160**,
332, 348
Opuntia stricta var. *stricta* **160**,
332, 348
Opuntia tardospina 331
Opuntia tomentosa **160**, 332,
348
Opuntia vulgaris 156, 331
orange cestrum 242, 317
orange cotoneaster 318
orange jessamine 294, 329
orange tuna 154, 330
oranjejasmyrn 329
oranjesestrum 317
orchid tree 204, 315
orchid tree, butterfly 204, 315
orgideëboom 315
orgideëboom, skoenlapper- 315

OROBANCHACEAE 104
Orobanche minor **104**, 332
Orobanche ramosa **104**, 332
orrelkactus 342
oumansoutbos 314
pagoda tree, Japanese 295
Pampas, purple 22, 318
Pampas grass 22, 318
Pampasgras 318
PAPAVERACEAE 60
paperbark, broad-leaf 237, 328
paper-spine cholla 138, 431
papierblom 327
paradysvoëlboom 315
paraffienbos 317
Paraserianthes lophantha **302**,
332, 352
Parkinsonia aculeata **186**, 332
parrot's feather 42, 329, 344
Parthenium hysterophorus 12,
92, 332, 345
paspalum, tussock 332
Paspalum quadrifarium **24**, 332
Passiflora caerulea **122**, 332
Passiflora edulis **122**, 332
Passiflora edulis forma *flavicarpa*
122
Passiflora mollissima 332
Passiflora tripartita var.
mollissima **124**, 332
Passiflora suberosa **124**, 332
Passiflora subpeltata **124**, 332
Passiflora tarminiana **124**
PASSIFLORACEAE 122, 124
passion flower, blue 122, 332
passion fruit 122, 332
Patterson's curse 86, 320
patula pine 174, 334
Paulownia imperialis 332
Paulownia tomentosa **274**, 332
PAULOWNIACEAE 274
peanut butter cassia 284, 339
pearl acacia 138, 311, 350
pearlwort, birdseye 75, 338
pencil cactus 164, 319, 346

Peniocereus serpentinus **162**,
333, 348
Pennisetum clandestinum **26**,
333
Pennisetum purpureum **26**, 333
Pennisetum setaceum 11, **26**,
333
Pennisetum villosum **28**, 333
peperboom, Brasiliaanse 338
peperboomwattel 311
peperbos 326
pepper tree 282, 338
pepper tree, Brazilian 282, 338
peppertree wattle 298, 311
perdestert 316
perdestert, lemoen- 316
perdestert, Nieu-Seelandse- 328
perdestert, treur- 316
perdestertboom 316
pereskia 126, 333, 348
Pereskia aculeata **126**, 333, 348
periwinkle, greater 72, 342
periwinkle, lesser 72, 342
periwinkle, Madagascar 97, 316
Persea americana 256
pers-echium 320
Persicaria capitata **70**, 333
perstamarisk 341
perswandelende Jood 342
Peruvian primrosebush 51, 327
pest pear of Australia 160, 332,
348
Phlebodium aureum **69**, 333
Phragmites australis (indigenous)
20
Phragmites mauritianus
(indigenous) 20
physic nut 211, 326
physic nut, cotton-leaf 206, 326
Phytolacca americana **105**, 333
Phytolacca decandra 333
Phytolacca dioica **258**, 333
Phytolacca octandra **105**, 333
PHYTOLACCACEAE 92, 105,
258
pickereel weed 44, 335

piesangdilla 332
pigeon berry 182, 320
PINACEAE 172, 174, 176
pine, Aleppo 174, 334
pine, Canary 172, 333
pine, chir 176, 334
pine, cluster 11, 174, 334
pine, loblolly 176, 334
pine, longifolia 176, 334
pine, Monterey 176, 334
pine, patula 174, 334
pine, radiata 176, 334
pine, slash 172, 333
pine-cone cactus 138, 341
pink porcelain lily 313
pink snakeweed 109, 340
pink tamarisk 179, 341
pink-flowered sheathed cholla
134, 319
Pinus canariensis **172**, 333
Pinus elliottii **172**, 333
Pinus halepensis **174**, 334
Pinus longifolia 334
Pinus patula **174**, 334
Pinus pinaster 11, **174**, 334
Pinus radiata **176**, 334
Pinus roxburghii **176**, 334
Pinus taeda **176**, 334
Pistia stratiotes **44**, 335, 344
pitahaya 325
pitanga 248, 323
pitch-apple 272
PITTOSPORACEAE 130, 226,
237
pittosporum, sweet 335
Pittosporum crassifolium **237**,
335
Pittosporum undulatum **226**,
335
PLANTAGINACEAE 101, 102
plantain, mud 48, 313
pleasing seaweed 54, 310
plectranthus, woolly 258, 335
Plectranthus barbatus var.
grandis **258**, 335

Plectranthus comosus 258, 335
PLUMBAGINACEAE 101
Poa aquatica 323
Poa pratensis **35**, 335
POACEAE 20, 22, 24, 26, 28,
30, 31, 32, 33, 34, 35
poinsettia, white 236, 323
pokeweed, American 105, 333
polgras, nassella- 329
polgras, wit- 329
polka-dot plant 100
POLYGONACEAE 70, 106, 110,
226, 270, 274
Polygonum capitatum 333
Polygonum sachalinense 336
POLYPODIACEAE 69
Polypodium aureum 69, 333,
335
Polypodium cordifolium 329
Polypodium exaltatum 330
pom-pom bossie 316
pompom weed 9, 84, 316, 344
pond lily, yellow 53
Pontederia cordata **44**, 335
PONTERIACEAE 38, 44
poplar, grey 15, 260, 335
poplar, Lombardy 262
poplar, match 262
poplar, white 260, 335
popoliri 335
poppy, water 50, 325
poppy, white-flowered Mexican
314
poppy, yellow-flowered Mexican
314
populier, vaal- 335
populier, wit- 335
Populus alba **260**, 335
Populus x canescens 15, **260**,
335
Populus deltoides **262**
Populus deltoides subsp.
deltoides 262
Populus deltoides subsp.
wisleri 262

- Populus nigra* 'Italica' **262**
 Port Jackson 214, 312, 350
 Port Jackson willow 312
 potato creeper 128, 339
 pothos, golden 131
 prickly malvastrum 328
 prickly pear, Aaron's-beard 165, 331
 prickly pear, cochineal 156, 331, 347
 prickly pear, creeping 136, 331, 347
 prickly pear, drooping 331
 prickly pear, imbricate 148, 319, 331
 prickly pear, large-flowered 331
 prickly pear, large round-leaved 158, 331, 348
 prickly pear, mission 331
 prickly pear, small round-leaved 154, 331, 347
 prickly pear, sweet 156, 331, 347
 primrose, water- 327
 primrosebush, Peruvian 51, 327
PRIMULACEAE 216, 233
 princess tree 274, 332
 prinsesboom 332
 privet, Californian 254, 326
 privet, Chinese 252, 326
 privet, Chinese wax-leaved 252, 326
 privet, common 254, 327
 privet, Japanese wax-leaved 254, 326, 327
 pronkgras 333
 prosopis, fluweel- 335
 prosopis, heuning- 335
Prosopis chilensis 188
Prosopis glandulosa var. *torreyana* 12, **188**, 335
Prosopis species 353
Prosopis velutina **188**, 335
PROTEACEAE 170, 180, 204, 206, 222, 234
Prunus serotina **264**, 335
Psidium cattleianum **264**, 336
Psidium x durbanensis **264**, 336
Psidium guajava **266**, 336
Psidium guineense **266**, 336
Psidium littorale var. *longipes* 336
Pueraria lobata 336
Pueraria montana var. *lobata* **126**, 336
 purgeerboontjie 326
 purperwinde 325
 purple glory bush 270
 purple granadilla 122, 33
 purple loosestrife 40, 327
 purple Pampas 22, 318
 purple rubber vine 116, 319
 purple top 92, 342
 purple top, untidy 94
 purple wandering Jew 72, 342
Pyracantha angustifolia 13, **190**, 192, 336
Pyracantha coccinea 192, **193**, 336
Pyracantha coccinea 'Lalandei' 193
Pyracantha crenatoserrata 192, **193**, 336
Pyracantha crenulata **190**, 192, 336
Pyracantha crenulata var. *rogersiana* 190, 336
Pyracantha fortuneana 336
Pyracantha koidzumii 192, **193**, 336
Pyracantha rogersiana 336
 qoqobala 340
 queen of the night, creeping 118, 325
 queen of the night cacti 144, 317, 345
 Queensland umbrella tree 276, 338
Quercus robur **211**
 raak-my-nie 328
 rabbit's-foot fern 69, 333
 radiata pine 176, 334
 radiataden 334
 radican's sword 49, 320
 rambling cassia 126, 339
 raspberry, Asian wild 196, 337
 raspberry, Ceylon 198, 337
 raspberry, Hogsback 198, 337
 raspberry, Mysore 198, 337
 raspberry, yellow Himalayan 196, 337
 red alga 55, 310
 red cedar 172, 326
 red eye 212, 311, 349
 red fescue 33, 323
 red firethorn 193, 336
 red ginger lily 78, 324
 red sesbania 288, 339, 353
 red sorrel 106, 337
 red sunflower 270, 341, 353
 red valerian 97, 317
 red water fern 36, 314, 343
 red water fern, tropical 36, 314, 343
 red-flowering silky oak 323
 red-flowering tea tree 273, 328
 redtop 30, 313
 reed, giant 10, 20, 314
 reed meadow grass 22, 323
 reed sweet grass 22, 323
 reusewattel 326
Reynoutria sachalinensis **274**, 336
Rhus glabra **294**, 336
Rhus succedanea 290, 341
Ricinus communis **208**, 337
 riet, Spaanse 314
 river red gum 218, 322
 river she-oak 168, 316
 rivina 337
Rivina humilis **92**, 337
Robinia pseudoacacia **194**, 337
 robusta turksvy 331
 rock hakea 170, 324, 351
 rolbossie 338

rolbossie, Russiese 338
rooibloekom 322
rooibranddoring 336
rooi-eik, Australiese 323
rooigemmerlelie 324
rooikrans 9, 311, 349
rooiseder 326
rooisiesbania 339
rooisonneblom 341
rooivuurdoring 336
rooiwatervaring 314
roos, Selons- 330
roos, wilde- 337
Rorippa nasturtium-aquaticum
329
Rosa eglanteria 337
Rosa multiflora **203**
Rosa rubiginosa **194**, 337
ROSACEAE 49, 96, 190, 193,
194, 196, 198, 203, 235, 246,
247, 248, 264
rose, multiflora 203
rose apple 230, 340
rose gum 222, 322
rosea cactus 146, 319
roseakactus 319
rosemary grevillea 180, 323
rough horsetail 98, 321
rough-barked honey myrtle 181
royal paulownia 332
rubber vine 116, 319
rubber vine, Madagascar 319
rubber vine, purple 116, 319
rubberklimop 319
Rubus bergii 196
Rubus cuneifolius **194**, 337
Rubus ellipticus **196**, 337
Rubus flagellaris **196**, 337
Rubus fruticosus **196**, 337
Rubus immixtus **198**, 337
Rubus niveus **198**, 337
Rubus x proteus **198**, 337
Rubus rigidus (indigenous) 198
Rumex acetosella **106**, 337
Rumex nervosus var.

usambarensis 337
Rumex usambarensis **226**, 337
Russian tumbleweed 64, 338
Russiese rolbossie 338
RUTACEAE 294
rye grasses 34
sage, lindenleaf 107, 338
sage, scarlet 106
sagewood, Chinese 234, 315
sagewood, Madagascar 235,
315
Sagina procumbens **75**, 338
Sagittaria platyphylla **46**, 338
SALICACEAE 228, 260, 262
saliehout, Chinese 315
saliehout, Madagaskar- 315
saligna gum 222, 322
salignabloekom 322
Salix babylonica **228**
Salix fragilis **228**
Salix mucronata (indigenous)
228
Salsola australis 338
Salsola kali **64**, 338
Salsola tragus **64**, 338
saltbush, old man 238, 314
saltbush, sponge-fruit 84, 314
salt-water cordgrass 28, 340
Salvia coccinea **106**
Salvia tiliifolia **107**, 338
salvinia 46, 338, 344
salvinia, small 46, 338
Salvinia minima **46**, 338
Salvinia molesta **46**, 338, 344
SALVINIACEAE 36, 46, 338
Sambucus canadensis **280**, 338
Sambucus nigra **280**, 338
Sambucus nigra subsp.
canadensis 338
San Pedro cactus 165
SAPINDACEAE 114, 210, 292
Sasa ramosa **35**, 338
satansbos 339
saucepan cactus 331
SAURURACEAE 74

scarlet sage 106
scarlet sumach 294, 336
scented agrimony 96, 312
Schefflera actinophylla **276**, 338
Schefflera arboricola **278**, 338
Schefflera elegantissima **278**,
338
Schimmelmannia elegans **55**,
310
Schinus molle **282**
Schinus terebinthifolia **282**, 338
Scotch broom 166, 319
Scotch thistle 318
scouring-rush, common 321
screw-pod wattle 212, 311
SCROPHULARIACEAE 109,
224
sea lavender 101, 327
seaweed, pleasing 54, 310
seder, rooi- 326
Selonsroos 330
senna, Argentine 284
senna, downy 286
senna, hairy 284, 339
senna, smooth 286, 339
senna, woolly 284, 339
Senna bicapsularis **126**, 339
Senna corymbosa **284**
Senna didymobotrya **284**, 339
Senna hirsuta **284**, 339
Senna multiglandulosa **286**
Senna occidentalis **286**, 339
Senna pendula var. *glabrata*
128, 339
Senna septemtrionalis **286**, 339
seringa 302, 328
seringboom 328
serpent cactus 162, 333
sesbania, red 288, 339, 353
sesbania, rooi- 339
Sesbania punicea **288**, 339, 353
sestrum, karmosyn- 317
sestrum, oranje- 317
sestrums 317
sheep sorrel 106, 337

shell ginger 76, 313
 she-oak, beach 168, 316
 she-oak, river 168, 316
 shoebutton ardisia 233, 313
 showberry, willow-leaved 235, 318
 siergrenadella 332
 silky hakea 170, 324, 351
 silky oak, Australian 206
 silver vine 131
 silver wattle 296, 311, 349
 silver-leaf bitter apple 66, 339, 345
 silver-leaf cotoneaster 318
 silwerdwegmispel 318
 silwerek, Australiese 323
 silwergras 22
 silwerwattel 311
SIMAROUACEAE 280
 Simon's cotoneaster 318
 Singapoer-madeliefie 340
 Singapore daisy 70, 340
 sisal 140, 312
 sisal hemp, 312
 sisblom 314
 skeleton weed 98, 317
 skoenlapperorgideëboom 315
 Skotse brem 319
 skulpgemmer 313
 slash pine 172, 333
 slender arrowhead 46, 338
 slender wild verbena 342
 small round-leaved prickly pear 154, 331, 347
 small salvinia 46, 338
 smeltersbossie 323
 smelter's-bush 99, 323
 smooth cordgrass 28, 340
 smooth senna 339
 snake cactus 162, 333, 348
 snake cactus, spiny 324
 snakeweed, blue 108, 340
 snakeweed, cayenne 340
 snakeweed, pink 109, 340
 soethakea 324

SOLANACEAE 62, 64, 66, 103, 107, 128, 200, 218, 242, 258, 268
Solanum betaceum **268**, 339
Solanum chrysotrichum **200**, 339
Solanum elaeagnifolium **66**, 339, 345
Solanum hispidum 339
Solanum mauritanum 13, **268**, 339, 353
Solanum pseudocapsicum **107**, 339
Solanum pseudocapsicum var. *diflorum* 107
Solanum seaforthianum **128**, 339
Solanum sisymbriifolium **200**, 340, 353
Solidago altissima **108**
Solidago gigantea **108**
Sollya heterophylla 315
 sonneblom, Mexikaanse 341
 sonneblom, rooi- 341
Sophora japonica 295
Sorghum halepense **28**, 340
Sorghum versicolor (indigenous) 28
 sorrel, red 106, 337
 sorrel, sheep 106, 337
 soutbos, blasie- 314
 soutbos, ouman- 314
 Spaanse besem 340
 Spaanse riet 314
 Spanish broom 166, 340
Spartina alterniflora **28**, 340
Spartium junceum **166**, 340
Spathodea campanulata **295**, 340
 spear thistle 62, 318, 344
 speedissel 318
Sphaeropteris cooperi 304
Sphagneticola trilobata **70**, 340
 'spider gum' 220, 322
 spiked water-milfoil 329

'spinnekopbloekom' 322
 spiny blue-leaf cactus 158
 spiny cholla 164, 319
 spiny cocklebur 66, 342
 spiny snake cactus 152, 324, 346
 sponge-fruit saltbush 84, 314
 spreading century-plant 140, 312
 spurge, leafy 99, 323
Stachytarpheta cayennensis **108**, 340
Stachytarpheta mutabilis **109**, 340
Stachytarpheta urticifolia 340
 statice 101, 327
 steenboksuring 337
Stellaria media **75**, 340
 sterremuur 340
 stiff verbena 342
 stiff-leaved bottlebrush 216, 316
 stiff-leaved cheesewood 237, 335
 stink bean 302, 332, 353
 stinkblaar, gewone 319
 stinkblaar, groot- 319
 stinkblaar, harige 319
 stinkboon 332
 stinking weed 286
 stinktree 280, 313
Stipa tenuissima 329
Stipa trichotoma 329
 St. John's wort 88, 325, 345
 St. John's wort, Henry's 250
 strangler cactus 118, 324
 strawberry guava 264, 336
 strawberry, wild 49, 320
Styphnolobium japonicum **295**
 styweblaarkasuur 335
 sugar gum 220, 322
 suikerbloekom 322
 sumach, scarlet 294, 336
 sumak, gladde 336
 sumba 326
 summer lilac 315
 sunflower, Mexican 208, 341

sunflower, red 270, 341, 353
 Surinam cherry 248, 323
 suring, steenbok- 337
 suurturksvy 332
 swaardvaring 329, 330
 swarthout, Australiese 311
 swartkersie 335
 swartwattel 311
 sweet hakea 170, 324
 sweet pittosporum 335
 sweet prickly pear 156, 331, 346
 sweetbriar 194, 337
 sword fern 69, 330
 sword fern, Boston 69, 330
 sword fern, erect 68, 329
 sword fern, ladder 68, 329
 swordplant, Amazon 50, 324
 syerige hakea 324
Syngonium podophyllum **128**,
 340
Syzygium australe **268**
Syzygium cumini **230**, 340
Syzygium guineense
 (indigenous) 230
Syzygium jambos **230**, 340
Syzygium paniculatum 268
 tabak, wilde- 330
 tabaka bume 330
 tajoe 333
 tall kangaroo paw 76
 tall verbena 92, 342
TAMARICACEAE 178, 179
 tamarisk, Chinese 178, 341
 tamarisk, desert 178, 341
 tamarisk, Franse 341
 tamarisk, French 178 341
 tamarisk, pers 341
 tamarisk, pink 179, 341
 tamarisk, woestyn- 341
Tamarix aphylla **178**, 341
Tamarix chinensis **178**, 341
Tamarix gallica **178**, 341
Tamarix ramosissima **179**, 341
Tamarix usneoides (indigenous)
 178, 341
 taro 48

taro, giant 48
 tea tree, red-flowering 273, 328
 tea tree, white 236, 326
Tecoma stans **288**, 341, 353
 teddy-bear cactus 136, 331
Tephrocactus articulatus **138**,
 341
Thelechitonina trilobata 70, 340
Thevetia peruviana **230**, 341
 thistle, nodding 60, 316
 thistle, Scotch 318
 thistle, spear 62, 318, 345
 thorn apple, common 64, 319
 thorn apple, downy 62, 319
 thorn apple, large 62, 319
Thunbergia grandiflora **133**
Tibouchina urvilleana **270**
 tickberry 326
 tickseed 86, 318
 tipoeboom 341
 Tipton weed 325
 tipu tree 290, 341
Tipuana speciosa 341
Tipuana tipu **290**, 341
Tithonia diversifolia **208**, 341
Tithonia rotundifolia **270**, 341,
 353
 tjirden 334
 toadflax, broad-leaf 101 327
 toadflax, common 102, 327
 toadflax, Dalmatian 101, 327
 tobacco, wild 258, 330
 tongblaar, Oos-Afrikaanse 337
 toon tree 290, 341
Toona ciliata **290**, 341
 toonboom 341
 torch cactus 162, 342
 toukaktus 324
Toxicodendron succedaneum
290, 341
Tradescantia fluminensis **70**, 341
Tradescantia zebrina **72**, 342
 tree daisy 328
 tree fern, Australian 304
 tree mallow 206, 327

tree of heaven 280, 313
 tree tomato 268, 339
 treurden 334
 treurperdestert 316
Trichocereus pachanoi **165**
Trichocereus spachianus **162**,
 342
 trifid weed 244, 317
 triplaris 270, 342
Triplaris americana **270**, 342
TROPAEOLACEAE 133
Tropaeolum speciosum **133**,
 342
 tropical red water fern 36, 314
 tropiese rooiwatervaring 314
 trosden 334
 tumbleweed 338
 tumbleweed, Russian 64, 338
 tuna, orange 154, 330
 turksvy, boere- 331
 turksvy, grootrondeblaar- 331
 turksvy, kabel- 319
 turksvy, kleinrondeblaar- 331
 turksvy, kruipende 331
 turksvy, luisies- 331
 turksvy, robusta 331
 turksvy, suur- 332
 tussock, nassella 24, 329
 tussock, white 24, 329
 tussock paspalum 24, 332
 tutsan 325
 ubhici 326
 ubhicolwesalukazi 326
 ubhongabhonga 339
 ubhubha 327
 ubobo 315
 ubukhwebezane, obungesibo
 obendabuko 326
 udabulamaxhaphozi 316
 ugamthilini 322
 ugigane 316
 ugomu 322
 uhalibhoma 312
 ujongila 327
 ujongilanga 327

ukatyi 330
 uKukuyi 333
Ulex europaeus **181**, 342
ULMACEAE 275
Ulmus parvifolia **275**
Ulmus procera 275
 umadolwana 333
 umakhephuka 339
 umalibhele 328
 umantuntanamanzi 320
 umbabane 341
 umbangabanga 339
 umbrella tree, dwarf 278
 umbrella tree, Queensland 276
 umbulalazwe 332
 umchakuva 337
 umdolofiya 314, 319, 324, 330,
 331, 332, 333, 341, 342
 umdungazwe 326
 umgobogobo 335
 umgqomagqoma 330
 umgwava 336
 umhlakuva 337
 umhlanga, ongesiwona
 owendabuko 314
 umhlangawezimvu 314
 umhlavuthwa 319
 umhlawuvuthwa 337
 umhlonyana 337
 um-inki 317
 umkakuva 337
 umkulu 329
 umnanja 333
 umnyandla 333
 umpungempu 330
 umsalinge 328
 umsalingwe 328
 umserinyeni 328
 umthi wentaka 318
 umtholo ingulukane 311
 umtholo wesilungu 311
 umthumawezinja 339
 umvumbangwe 319
 umzimuka 333

Undaria pinnatifida 310
 undunyungu 336
 ungwengwe 333
 unjengosolo 313
 unomadolomade 333
 unomatananga 316
 untidy purple top 94
 unwele 333, 334
 unyinge 312
 uphomuphomu 316
 upopulini 335
 urhododo 325
 usandanezwe 317
 utshesi 339
 utywala bentaka 326
 uvimbangameva 315
 uwatala 329
 uwatela 311
 uzimbeva 333
 vaalmimosa 311
 vaalpopulier 335
 valerian, red 97, 317
 vals witstinkhout 317
 varing, haaspoort- 333
 varing, swaard- 329, 330
 veergras 333
 veined verbena 342
 velvet ash 293
 velvet bur cactus 136, 331
 velvet dock 109
 velvet mesquite 188, 335
 velvet opuntia 160, 332, 348
 velvet tree-pear 160, 332
Verbascum thapsus **109**
 verbena, Brazilian 342
 verbena, slender wild 94, 342
 verbena, stiff 94, 342
 verbena, tall 92, 342
 verbena, veined 342
Verbena bonariensis **92**, 342
Verbena brasiliensis **94**, 342
Verbena incompta **94**
Verbena rigida **94**, 342
Verbena venosa 94, 342

VERBENACEAE 92, 94, 108,
 109, 182, 184
 vergeet-my-nie-boom 320
 vieruurtjie 328
Vinca major **72**, 342
Vinca minor **72**, 342
 vinegar bush 294, 336
Vitex trifolia **278**, 342
 vlamboom, Afrikaanse 340
 vlier, Europese 338
 vlier, Kanadese 338
 voëltjiebos 318
 Wallangarra wattle 232, 311
 wandelende Jood, pers 342
 wandelende Jood, witblom- 341
 wandering Jew, purple 72, 342
 wandering Jew, white-flowered
 70, 341
 wasboom 341
 water fern, red 36, 314, 343
 water fern, red tropical 36, 314,
 343
 water foxtail 31, 313
 water hornwort (indigenous) 38
 water hyacinth 10, 13, 38, 320,
 343, 344
 water lettuce 44, 335, 344
 water lily, fringed 53, 330
 water lily, gringed 330
 water lily, yellow 44, 53, 330
 water poppy 50, 325
 water weed, Canadian 40, 320
 water weed, dense 38, 320
 waterlisma 313
 water-clover, Australian 52, 69,
 328
 watercress 42, 329
 waterduisendblaar 329
 waterhiasint 320
 waterlelie, geel 330
 water-milfoil, spiked 329
 waterpes 320
 waterpes, Kanadese 320
 water-primrose 327

waterslaai 335
 watervaring 338
 watervaring, klein 338
 watervaring, rooi- 314
 watervaring, tropiese rooi- 314
 wattel, Bailey-se- 311
 wattel, goue- 311
 wattel, groen- 311
 wattel, langblaar- 311
 wattel, peperboom- 311
 wattel, reuse- 326
 wattel, silwer- 311
 wattel, swart- 311
 wattle, Bailey's 296, 311, 349
 wattle, black 10, 298, 311, 350
 wattle, Brisbane 232, 311
 wattle, cascade 232, 311
 wattle, fringed 232, 311
 wattle, golden 214, 311, 350
 wattle, green 296, 311, 349
 wattle, hop 233, 312
 wattle, kangaroo 311
 wattle, long-leaved 212, 311, 350
 wattle, peppertree 298, 311
 wattle, screw-pod 212, 311
 wattle, silver 296, 311, 349
 wattle, Wallangarra 232, 311
 wavy-leaf gaura 330
 wax tree 290, 341
Wedelia trilobata 340
 weeping bottlebrush 218, 316
 weeping willow 228
 white ash 292, 323
 white ginger lily 78, 324
 white mulberry 256, 328
 white poinsettia 236, 323
 white poplar 260, 335
 white tea tree 236, 326
 white tussock 24, 329
 white-flowered Mexican poppy 60, 314
 white-flowered wandering Jew 70, 341
 wigandia 275, 342

Wigandia caracasana 342
Wigandia urens var. *caracasana* **275**, 342
 wild coffee 286
 wild morning glory 318
 wild oats 32
 wild strawberry 49, 320
 wild tobacco 258, 330
 wild tomato 340
 wild verbena 342
 wilde-aarbei 320
 wilderoos 337
 wildetabak 330
 wildetamatie 340
 wilger, goud- 312
 wilgerhakea 324
 willow, brittle 228
 willow, crack 228
 willow, Port Jackson 312
 willow, weeping 228
 willow hakea 222, 324
 willow-leaved showberry 235, 318
 witakasia 337
 witblom-bloudissel 314
 witblomwandelende Jood 341
 witgemmerlelie 324
 witmoerbei 328
 witpolgras 329
 witpopulier 335
 witstinkhout, vals 317
 woestyntamarisk 341
 woodrush 34, 327
 woolly plectranthus 258, 335
 woolly senna 284, 339
Xanthium spinosum **66**, 342
Xanthium strumarium **66**, 342
 yellow bells 288, 341, 353
 yellow bunny-ears 136, 331
 yellow firethorn 190, 336
 yellow flag 51, 325
 yellow floating-heart 330
 yellow ginger lily 80, 324
 yellow Himalayan raspberry

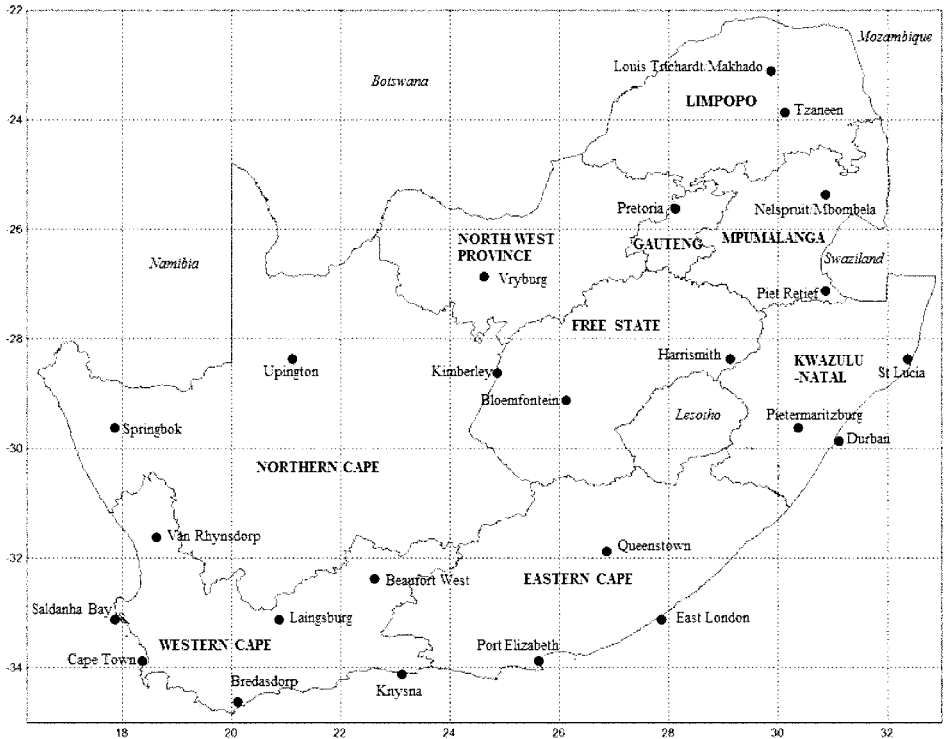
196, 337
 yellow oleander 230, 341
 yellow pond lily 53
 yellow water lily 44, 53, 330
 yellow-flowered Mexican poppy 60, 314
 zaba-zaba 319
Zebrina pendula 342
ZINGIBERACEAE 76, 78, 80
Zinnia peruviana 270

ABOUT THE AUTHOR











Lesley Henderson has a B.Sc Hons in Botany from the University of the Witwatersrand and has been stationed at the Pretoria National Herbarium for her entire working career. Her first post, from 1979 to 1985, was in the Plant Exploration section of the Botanical Research Institute where she began roadside surveys of invasive alien plants (IAPs) while engaged in her major work which culminated in the Botanical Survey Memoir "Barrier plants of southern Africa". Since 1986 she has been employed by the Weeds Research Division of the ARC-Plant Health and Protection (previously Plant Protection Research Institute) where she continued roadside surveys of IAPs which span almost 40 years and 150 000 km of recordings. Since 1994 she has co-ordinated the Southern African Plant Invaders Atlas (SAPIA) and developed the SAPIA database which has provided baseline information for legislation, monitoring and management of IAPs in South Africa. She received the Southern African Weed Science Society (SAWSS) Dave Annecke Research Award in 1998. In January 2017 she was awarded the South African Association of Botanists (SAAB) Silver Medal largely for the development of the SAPIA database which has provided crucial data on plant invasions for scientific studies nationally and internationally, her many publications and SAPIA newsletters, and in particular the 2001 field guide "Alien weeds and invasive plants – a complete guide to declared weeds and invaders in South Africa".



SOUTH AFRICA, ITS PROVINCES AND SELECTED LOCALITIES, IN RELATION TO NAMIBIA, BOTSWANA, MOZAMBIQUE, SWAZILAND AND LESOTHO.



QUICK GUIDE: KEY TO IDENTIFICATION

Classification	Symbol	Page
Grasses, Reeds & Grass-like Plants		21
Aquatic & Wetland Plants		35
Marine Plants		54
Herbs: succulent		56
Herbs: spiny		60
Herbs: ferns		68
Herbs: low-growing, mat-forming		70
Herbs: erect, clump-forming, strap-shaped leaves		76
Herbs: erect		82
Climbers & Scramblers		110

Classification

Symbol Page

Trees & Shrubs Succulent: mostly < 1m high



134

Trees & Shrubs Succulent: 1–10 m high or more



140

Trees & Shrubs Woody: almost leafless



166

Trees & Shrubs Woody: leaves scale- or needle-like



178

Trees & Shrubs Woody: leafy, spiny-stemmed



182

Trees & Shrubs Woody: leaves simple, lobed or deeply incised



204

Trees & Shrubs Woody: leaves simple, long



212

Trees & Shrubs Woody: leaves simple, broad



238

Trees & Shrubs Woody: leaves trifoliolate or palmate



276

Trees & Shrubs Woody: leaves pinnate



280

Trees & Shrubs Woody: leaves bipinnate



296

Trees & Shrubs Woody: Tree Ferns, leaves tripinnate



304



Invasive Alien Plants in South Africa

Lesley Henderson, ARC - Plant Health and Protection

South Africa is one of the most biodiverse, yet severely invaded, regions of the world. Invasive alien species not only threaten the extraordinary indigenous flora and fauna of the region but also impact human livelihoods and the functioning of ecosystems which sustain all life.

This book provides descriptions, distributions and illustrations of more than 400 species and includes all listed invasive plant species that are covered by the Alien and Invasive Species Regulations of the National Environmental Management: Biodiversity Act (NEM:BA) (10/2004).

Each species account includes its legal and invasive status, biological control if available, region of origin, cultivated uses, habitats invaded, potential threats or impacts and other harmful properties.

A quick guide to identification is provided inside the back cover for the following major groups of plants: Grasses, Reeds and Grass-like plants; Aquatic and Wetland plants; Marine plants; Herbs; Climbers and Scramblers; Trees and Shrubs.



environmental affairs
Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

