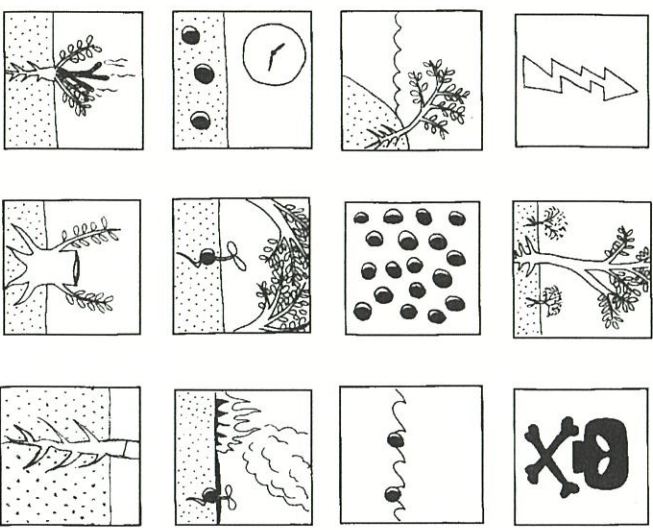


SESBANIA

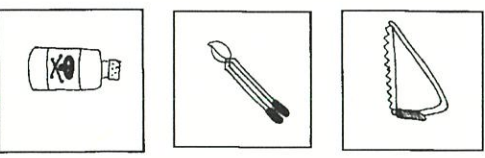
Sesbania punicia



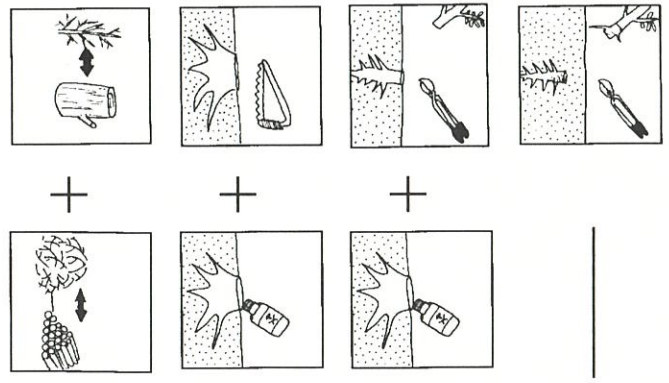
• PLANT SURVIVAL



TOOLS



HOW TO DO IT



NOTES:

Sesbania favours soggy growing conditions and is found at the edge of vleis and rivers.

Sesbania has an unpleasant smell and is poisonous. Wash your hands before eating after working with sesbania.

SESBANIA

Sesbania punicia

SPANISH BROOM
Spartium junceum

STINKBEAN
Passerianthus lophantha



PLANT SURVIVAL

TOOLS

HOW TO DO IT

NOTES:

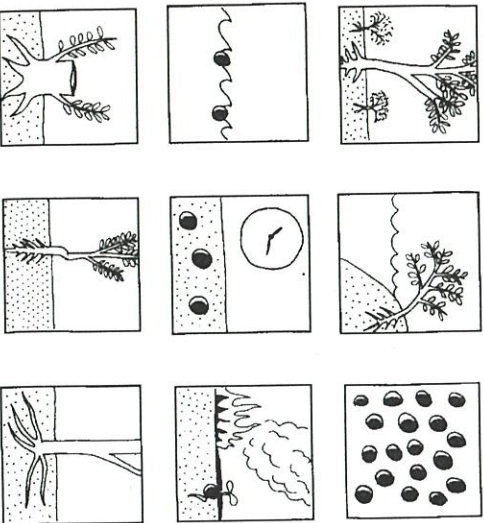
- Stinkbean is often confused with black wattle as they have similar leaves and growing conditions.
- Stinkbean has a shorter lifespan than black wattle, and adult trees are smaller.
- Stinkbean does not resprout as vigorously as black wattle, but initial growth is very fast.

STINKBEAN

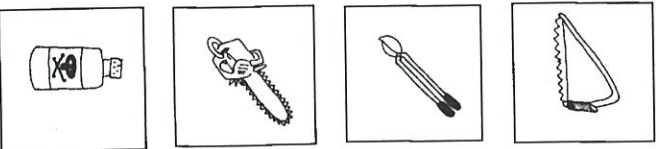
Passerianthus lophantha



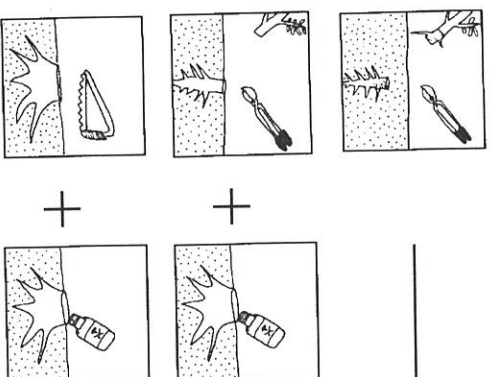
PLANT SURVIVAL



TOOLS



HOW TO DO IT



NOTES:

Broom was brought in as an ornamental and because its flowers are showy many people don't regard it as a problem. It is however highly invasive.

SPANISH BROOM

Spartium juncum

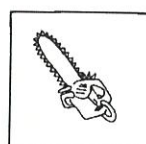
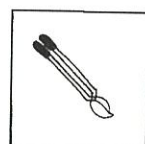
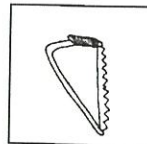
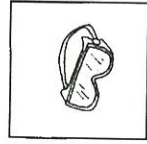
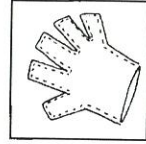
HAKEAS

Hakea spp

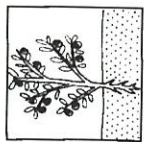
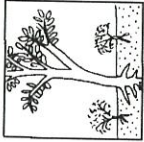
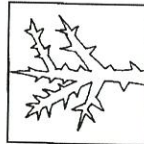
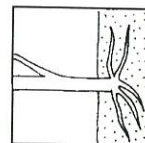
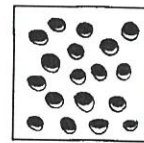
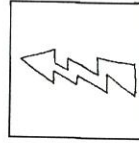
Illustration: Sweet Hakea



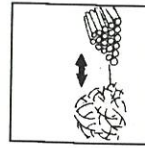
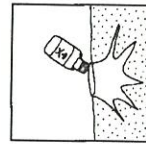
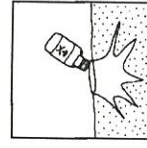
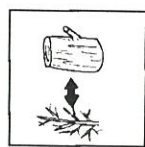
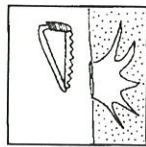
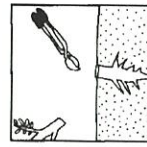
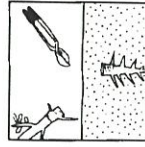
TOOLS



PLANT SURVIVAL



HOW TO DO IT



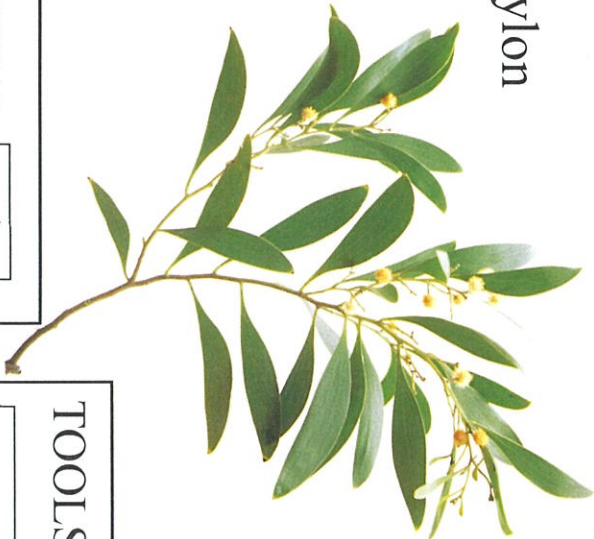
NOTES:

Blackwood is a valuable furniture-making wood, and will be easily sold if care is taken to select suitable straight sections when cutting up the tree. Due to the value of the wood, ring-barking is impractical and wasteful.

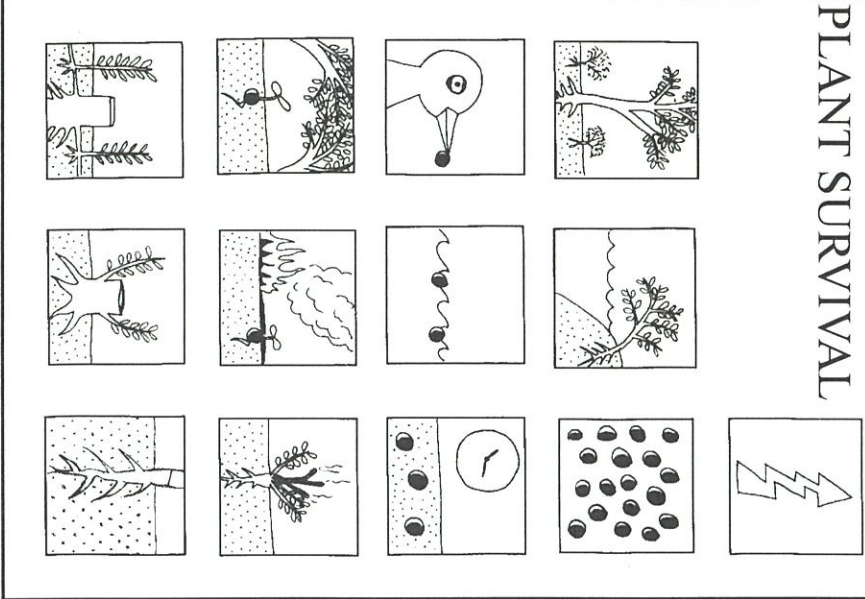
Blackwood is difficult to eradicate and several timely follow-ups will be required.

BLACKWOOD

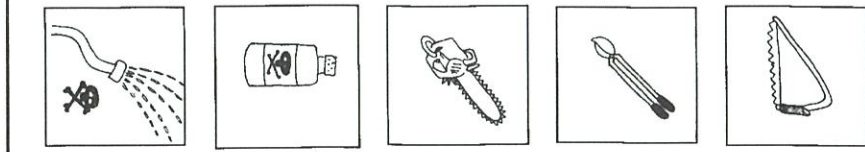
Acacia melanoxylon



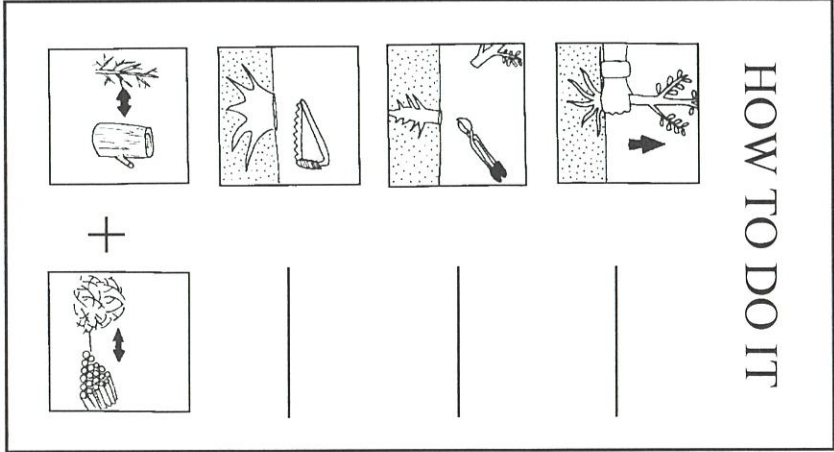
PLANT SURVIVAL



TOOLS



HOW TO DO IT



NOTES:

Hakeas drop their seeds a few days after they are cut down. In hot weather seeds are dropped even quicker. In order to prevent seedlings from coming up all over the place, stacking must be done neatly.

Hakeas do not resprout, but small branches or even leaves which are left on the stump can develop into a new bush.

HAKEAS

Hakea spp

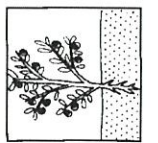
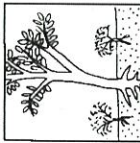
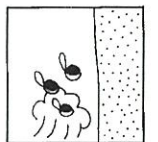
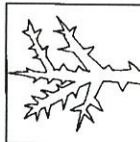
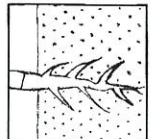
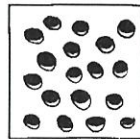
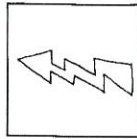
PINES

Pinus spp

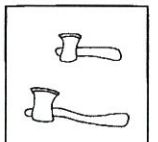
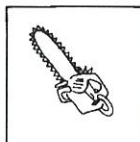
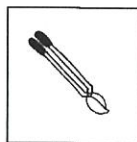
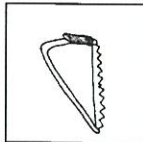
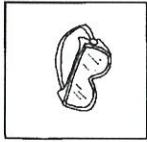
Illustration: Cluster Pine



PLANT SURVIVAL



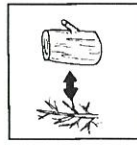
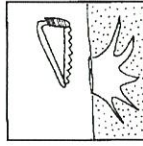
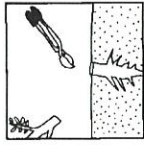
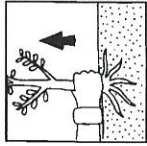
TOOLS



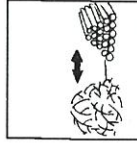
LONGLEAF WATTLE

Acacia longifolia

HOW TO DO IT



+



NOTES:

Longleaf wattle does not readily resprout after cutting, but sometimes there are small branches or undeveloped buds on the bark which can grow. This is why the tree is cut off at ground level, to remove all chances of resprouting.

Longleaf wattle has been infected with a gall wasp which reduces seed production.

LONGLEAF WATTLE Acacia longifolia



PLANT SURVIVAL

TOOLS

PINES Pinus spp

HOW TO DO IT

NOTES:

With few exceptions, pines do not resprout, so no herbicide is needed.

However care must be taken to remove all branches and leaves from the stump.

For canary pines treat the same way as gums.

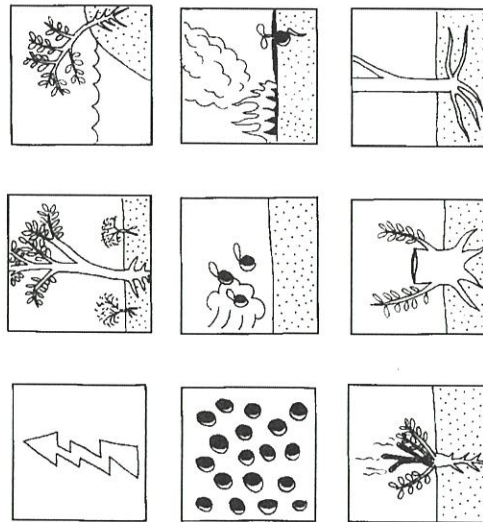
GUMS

Eucalyptus spp

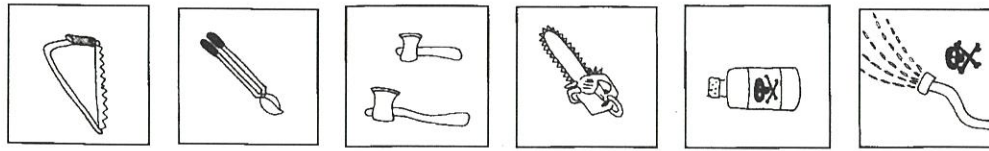
Illustration: Spider Gum



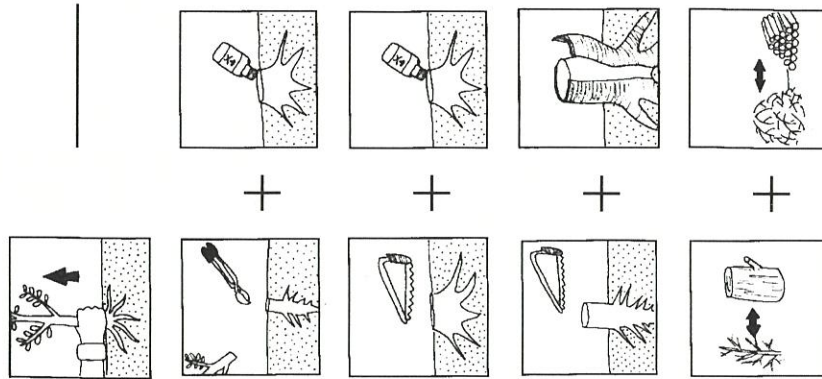
PLANT SURVIVAL



TOOLS



HOW TO DO IT



NOTES:

Old black wattles with rough flaky bark do not resprout if the cut is clean. Otherwise treat with herbicide.

BLACK WATTLE

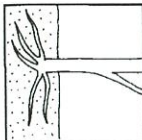
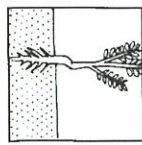
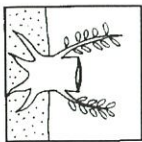
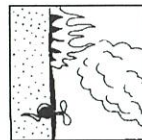
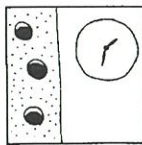
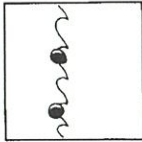
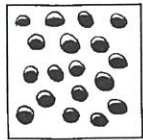
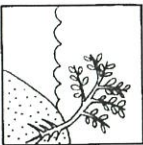
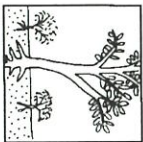
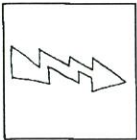
Acacia mearnsii

BLACK WATTLE

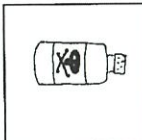
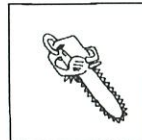
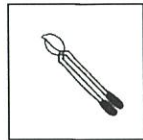
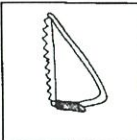
Acacia mearnsii



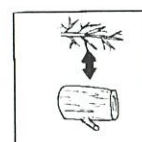
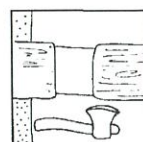
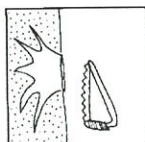
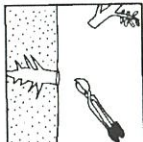
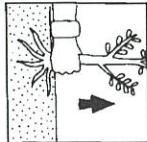
PLANT SURVIVAL

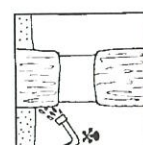
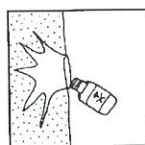
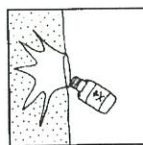


TOOLS



HOW TO DO IT





NOTES:

The leaves of all gum trees have that well known “cold medicine” smell. Eucalyptus oil is used to make these medicines.

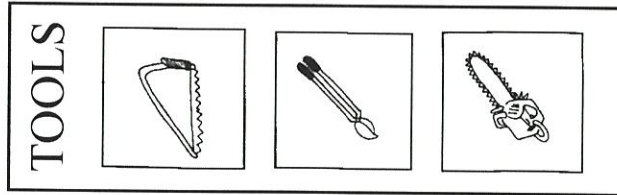
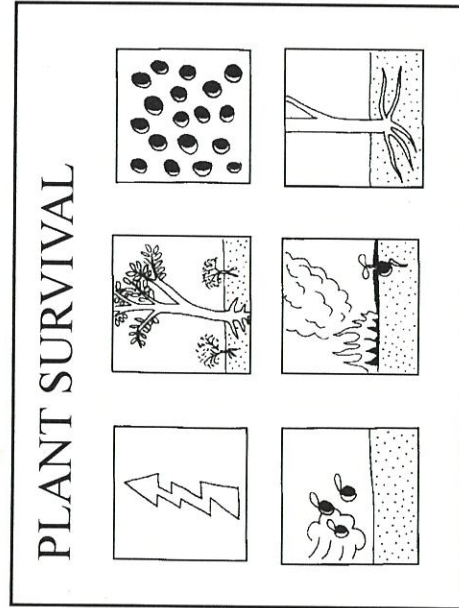
Unlike mature acacias, large gums are capable of resprouting. And usually require repeated applications of herbicide to kill them.

GUMS

Eucalyptus spp

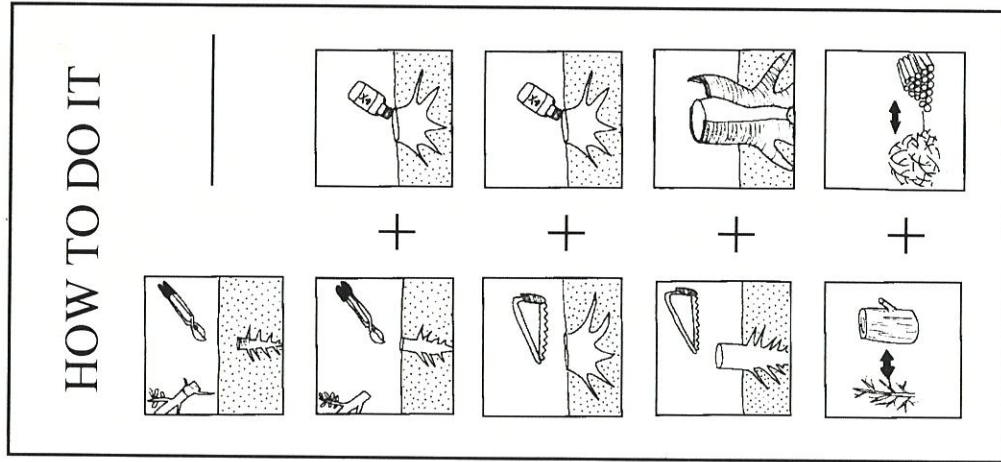
MYRTLE

Leptospermum laevigatum



GOLDEN WATTLE

Acacia pycnantha



NOTES:

Golden wattle has no natural enemies in South Africa and it has very similar survival tactics to Port Jackson. It seems likely to become a big problem in the future.

Old trees don't resprout.

TIP: Knock the bark with the back of the saw to loosen it before stripping.

GOLDEN WATTLE

Acacia pycnantha



PLANT SURVIVAL

TOOLS

MYRTLE

Leptospermum laevigatum

HOW TO DO IT

NOTES:

Myrtle often has small branches low down on the stem of quite big trees. If these are left on the stem they continue growing after the tree has been cut down. For this reason it is best to remove the plant as close to the ground as possible.

Myrtle does not resprout.

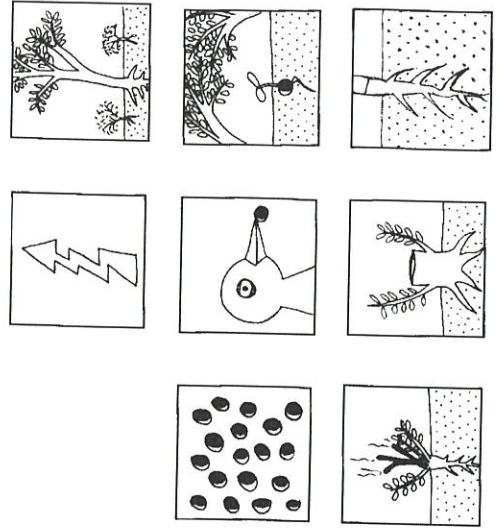
Myrtle makes excellent firewood.

MANATOKA

Myoporum tenuifolium



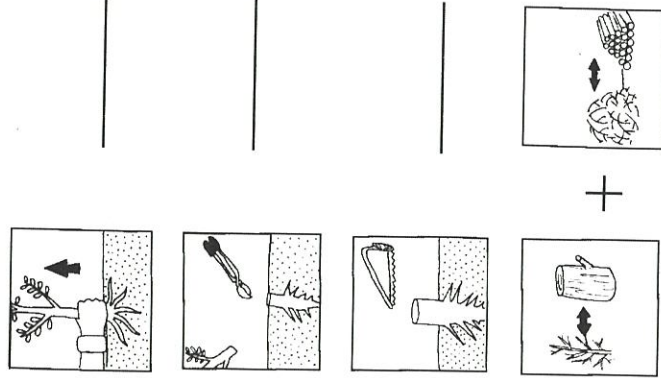
PLANT SURVIVAL



TOOLS



HOW TO DO IT



NOTES:

Rooikrans makes good braai-wood.

Rooikrans often grows on sand blown inland from the sea.

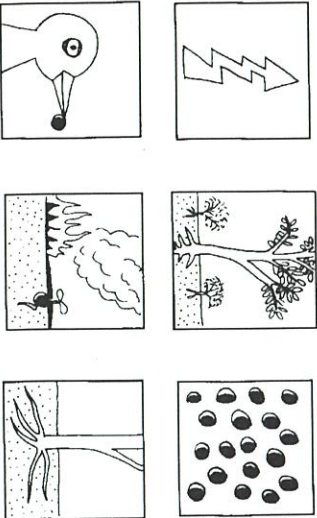
ROOIKRANS
Acacia cyclops

ROOIKRANS

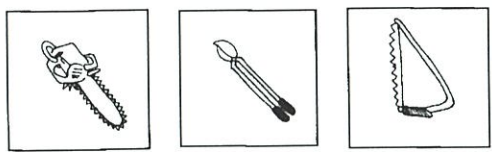
Acacia cyclops



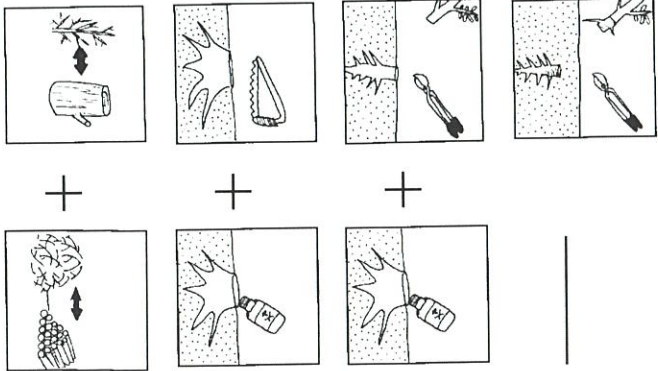
PLANT SURVIVAL



TOOLS



HOW TO DO IT



NOTES:

Many people believe Manatoka to be indigenous. In fact it comes from Australia.

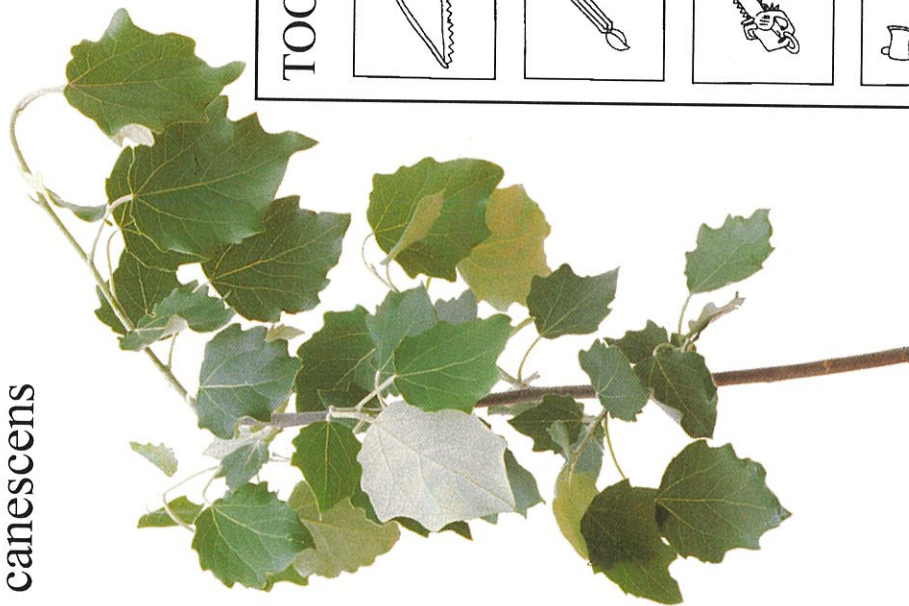
It is difficult to kill Manatoka outright at first attempt. Any resprouting that occurs should be sprayed with herbicide repeatedly until dead.

MANATOKA

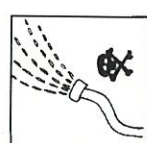
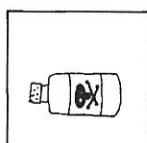
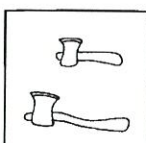
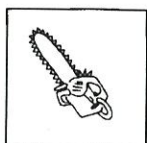
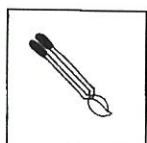
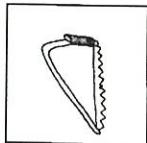
Myoporum tenuifolium

MATCHWOOD POPLAR

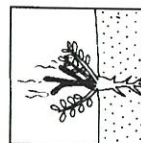
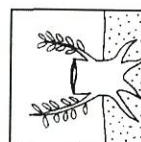
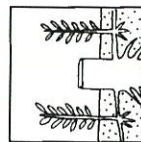
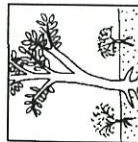
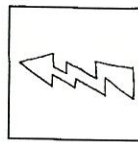
Populus x canescens



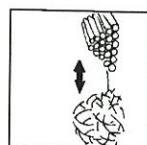
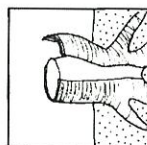
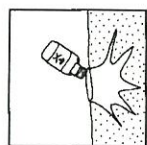
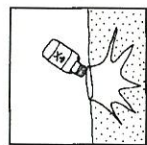
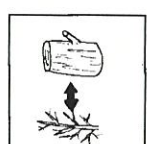
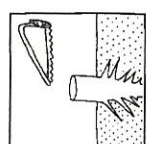
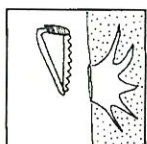
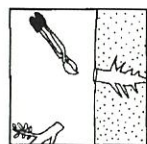
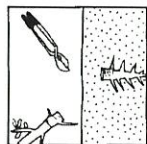
TOOLS



PLANT SURVIVAL



HOW TO DO IT



+

+

+

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NOTES:

Although Port Jackson has been infected with the gall fungus *Uromycladium tepperianum*, it is still a troublesome weed in lowland areas.

Old trees with rough flaky fire-proof bark don't resprout, if the cut is clean.

TIP: Knock on the bark with the back of the saw to loosen it before peeling.

PORT JACKSON

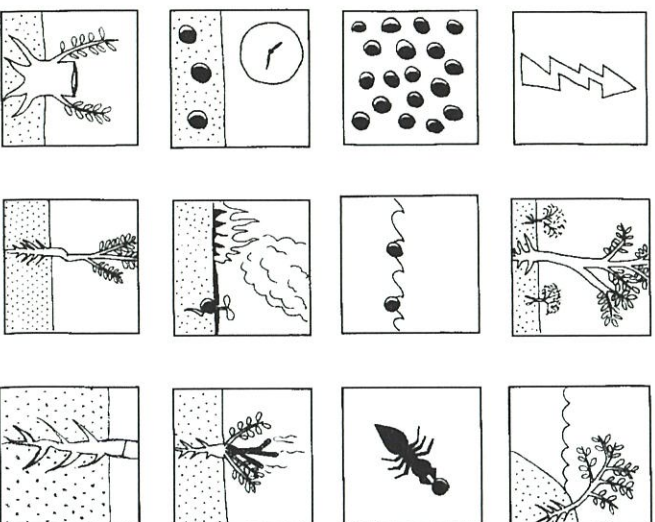
Acacia saligna

PORT JACKSON

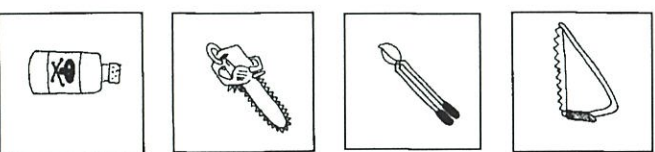
Acacia saligna



PLANT SURVIVAL



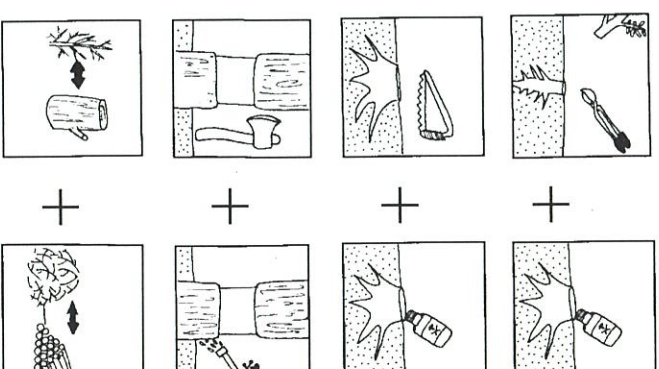
TOOLS



MATCHWOOD POPLAR

Populus x canescens

HOW TO DO IT



NOTES:

These poplars do not spread by seed in South Africa. New growth sprouts from the roots creating a thicket of small trees. This can happen whenever the 'parent' is damaged.

Poplar cannot invade dry areas and this limits its spread, but it is a very thirsty invader of well-watered areas.

Poplar wood is not readily attacked by borer beetles and this made it an important building material. For this reason it was deliberately planted.

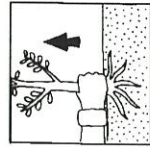
PITTISPORUM

Pittisporum undulatum

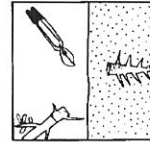


(What the pictures mean) GLOSSARY

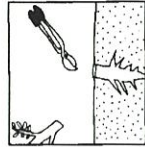
HOW TO DO IT



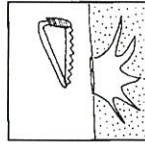
GRIP LOW DOWN
AND PULL OUT
BY HAND



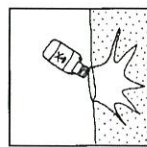
PUSH LOPPERS 40 mm
INTO THE GROUND
AND CUT PLANT
OFF AT ROOT
LEVEL



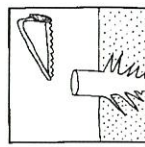
CUT TREE
OFF AT
GROUND LEVEL



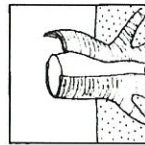
SAW TREE OFF
AT GROUND LEVEL



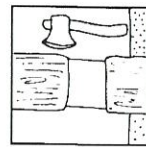
IMMEDIATELY
DAB POISON ON
REMAINING BARK



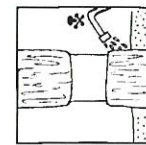
SAW TREE OFF
ABOUT 25cm ABOVE
GROUND LEVEL



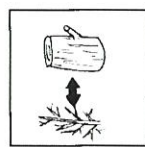
PEEL ALL THE
BARK OFF TO
BELOW THE
GROUND



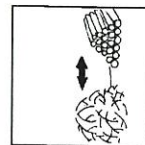
RING BARKING:
CUT TWO GROOVES
AROUND THE TREE
ABOUT 30 – 40 cm APART.
THEN, WITH THE BLUNT
END OF THE CHOPPER,
LOOSEN AND REMOVE
ALL THE BARK IN
BETWEEN



IMMEDIATELY
SPRAY POISON ON
THE REMAINING
BARK BELOW THE
REMOVED AREA

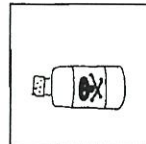
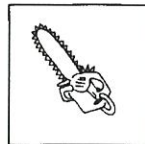
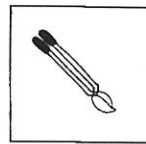
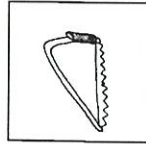


SEPARATE TWIGS
FROM FIREWOOD

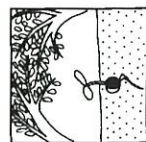
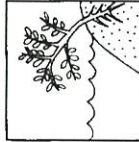
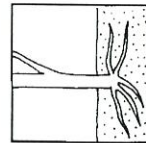
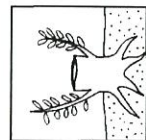
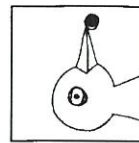
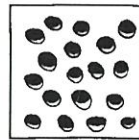
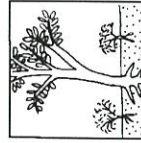
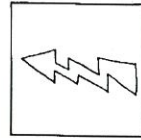


MAKE
SEPARATE
PILES

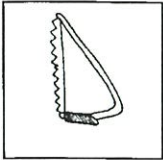
TOOLS



PLANT SURVIVAL



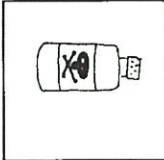
TOOLS



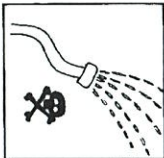
BOW SAW
350 mm



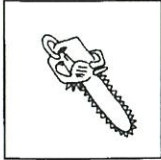
LOPPERS



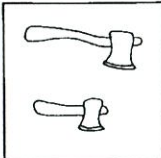
HERBICIDE
(poison)
DABBING BOTTLE



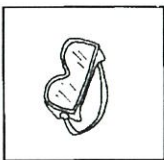
HERBICIDE
(poison) SPRAY



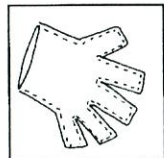
CHAINSAW
(For use on big trees)



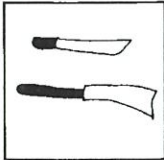
AXE
CHOPPER



GOGGLES

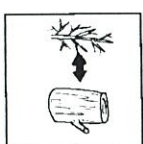
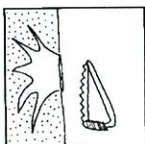
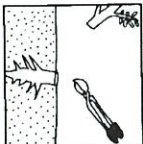
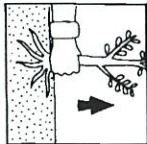


GLOVES

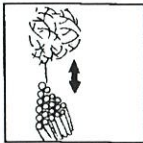
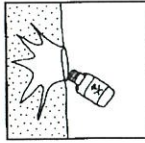
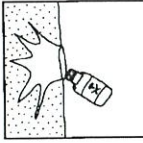


PANGAS

HOW TO DO IT



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NOTES:

This tree is especially
troublesome in forested
areas.

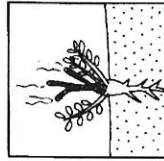
PITTISPORUM
Pittisporum undulatum

CHERRY PIE

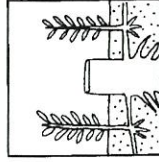
Lantana camera

(What the pictures mean) GLOSSARY

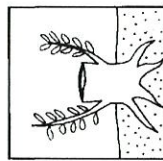
PLANT SURVIVAL



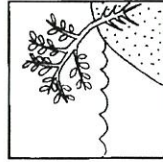
NEW GROWTH
SPROUTS FROM
THE BASE OF
THE STEM



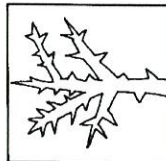
NEW GROWTH
SPROUTS
FROM ROOTS



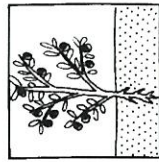
NEW GROWTH
SPROUTS
FROM THE STEM



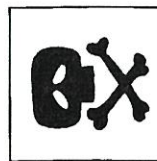
GROWS IN
DAMP OR
WET AREAS



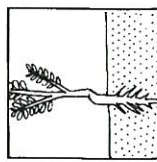
THORNS
OR
PRICKLES



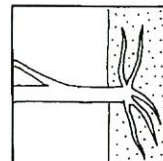
SEEDS STORED
ON PLANT UNTIL
FIRE OR CUTTING



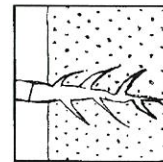
PLANT IS
POISONOUS
IF EATEN



YOUNG PLANT
BREAKS OFF
AT THE KINK
WHEN PULLED

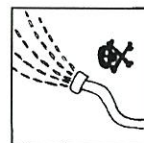
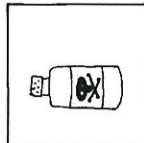
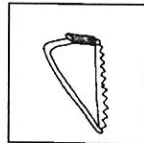
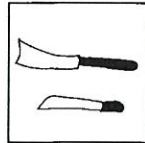
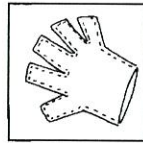


YOUNG PLANT
HAS SHALLOW
ROOTS
(easy to pull)

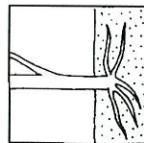
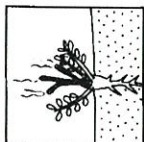
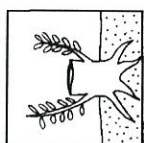
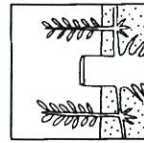
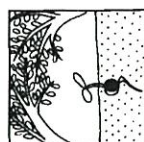
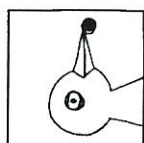
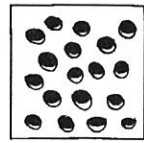
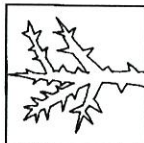
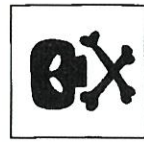
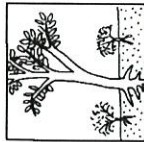
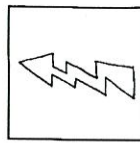


YOUNG PLANT
HAS DEEP
TAPROOT
(difficult to pull)

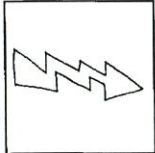
TOOLS



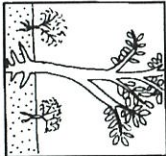
PLANT SURVIVAL



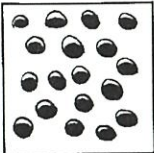
PLANT SURVIVAL



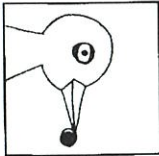
GROWS FAST



GROWS BIGGER
THAN FYNBOS



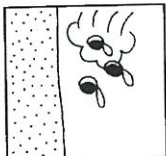
MAKES
LOTS OF SEEDS



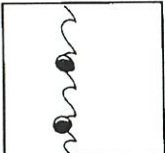
SEEDS
SCATTERED
BY BIRDS



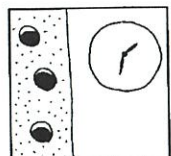
SEEDS
SCATTERED
BY ANTS



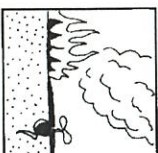
SEEDS
SCATTERED BY
THE WIND



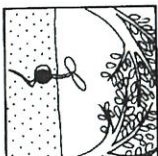
SEEDS SPREAD
DOWNSTREAM
BY WATER



SEEDS CAN
SLEEP IN THE
GROUND FOR
MANY YEARS

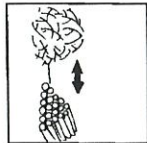
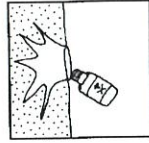
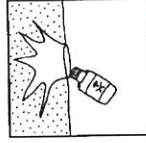
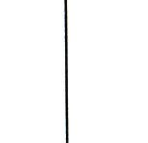
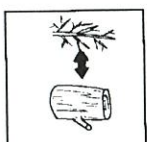
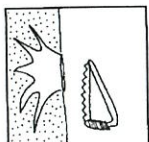
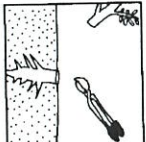
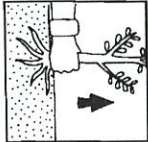


FIRE SIGNALS
THE SEEDS
TO START
GROWING



SEEDS CAN
START TO GROW
IN SHADE
OR FOREST

HOW TO DO IT



NOTES:

This is the only plant for which it is necessary to use a panga. It is needed to hack away the prickly branches in order to get at the stump which should then be cut off as close as possible to ground level with a bow saw. The stump, including the remaining bark, should be treated immediately with herbicide.

CHERRY PIE
Lantana camera

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ACKNOWLEDGEMENTS:

The production of The Alien Clearing Handbook for the Western Cape was truly a family effort. I am deeply indebted to my wife Alida Croudace for the many many hours she spent hunched over the computer doing the layout for this book.

I am also indebted to my son Kane for converting my spidery sketches to the clear diagrams on which the usefulness this handbook depends.

The Red Hill Fynbos Restoration team gave invaluable feedback on an earlier draft of this handbook, contributing to its final design.

In addition my sincerest appreciation to Marie-Lou Roux of the Habitat Council and Andy Gubb of the Wildlife and Environment Society of South Africa for their enthusiasm about this handbook and their invaluable assistance in bringing it to publication.

THE ALIEN CLEARING HANDBOOK FOR THE WESTERN CAPE

By Jeremy Croudace
Drawings by Kane Croudace

Garden Route



Bitou 044 533 2625
Knysna 044 387 1978
George 044 877 1360
Mossel Bay 044 691 3230
Still Bay 028 754 1106

Errata:

On contents page and:
pp. 17 & 18 for *Passerianthus* (*lophantha*) read *Paraserianthus*
pp. 19 & 20 for *Sesbania pumicia* read *Sesbania pumicea*
pp. 35 & 36 for *Pittisporum* (*undulatum*) read *Pittosporum*
pp. 37 & 38 for *Lantana camara* read *Lantana camara*



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FOREWORD

For many years, the eradication of invasive alien vegetation from natural areas was left to small groups of dedicated nature lovers. At last, and largely as a consequence of the recognition of the impact on water resources, the eradication of alien vegetation is receiving serious attention.

In this handbook, Jeremy Croudace challenges current extensive alien hacking practices, where alien clearing is regarded as an unskilled job undertaken by large teams and which will inevitably involve costly follow-up procedures. He shows clearly that the long-term control of alien vegetation involves two things - the individual invading plant and the individual worker. Dealing with the plant requires an understanding of the survival tactics of each species and the application of appropriate techniques to ensure that there is no regrowth. Each individual worker should acquire the knowledge and skill to deal appropriately with the invading plant species. It is only through the recognition of the appropriate training that effective alien vegetation control with minimal damage to the indigenous vegetation will be achieved.

Although the handbook has been produced primarily for workers and nature lovers, rather than for scientists and managers, it should be used as a baseline reference for any person or institution involved in the clearing of alien vegetation. The major invasive alien species can be recognised easily and the permanent eradication of individual plants is clearly explained. However, the successful clearing and control of invasive alien vegetation will not occur without comprehensive training programmes and the development of skills and capacity. Training and capacity-building is an essential part of the future of South Africa. This handbook serves as a necessary resource in such a training programme.

The work of people like Jeremy Croudace often goes unrecognised by the professional scientific community, yet it is the commitment of these people that makes a fundamental difference to the rehabilitation of natural areas. This handbook is the product of years of quiet and determined dedication. Jeremy Croudace has trained several small groups of unskilled and largely illiterate people, using the concepts, scientific principles and techniques explained so clearly in the booklet. He has engendered in them knowledge of basic ecology and a love for the veld - the only sound basis for the long-term control of alien vegetation invasion.

Andy Gubb
Wildlife and Environment Society of South Africa
Western Cape Region

BACKGROUND

The serious problem of alien vegetation invading large portions of South Africa's natural areas has been recognized for some time. In the past several efforts have been made to eradicate alien vegetation with varying degrees of success.

Up until now alien clearing has been seen as an unskilled job, and workers have been sent into the field with scant training or knowledge of the alien plants they are expected to kill. This has resulted in large amounts of money being wasted on ineffectual work. This is particularly true in the case of alien species which resprout after clearing. In such cases the cost of follow up operations often exceeds the cost of initial clearing and usually has to be repeated indefinitely.

Traditionally, the blanket spraying of herbicides has been the preferred method of 'dealing' with resprouting aliens. This is expensive and has a disastrous effect on any surviving fynbos. Bare ground caused by herbicide spraying is more vulnerable to reinfestation by alien vegetation.

ABOUT THIS HANDBOOK

The purpose of this hand book is to make the information needed for killing invading alien plants at first encounter (with minimal damage to indigenous vegetation), accessible to the largely illiterate workers who are employed to clear the catchments and other natural areas.

Botanical concepts such as *serotiny* (the retention of seeds until the death of the plant) and *myrmecochory* (dispersal of seeds by ants) as well as other 'tricks' employed by the species to ensure its survival have been represented by diagrams under the heading of PLANT SURVIVAL. There are twenty diagrams in this category, and workers will be required to learn their meaning by heart in order to make the best use of this handbook.

TOOLS are also depicted under their own heading, but these diagrams are self explanatory.

Diagrams explaining the appropriate methods of eradication for each species are included under the heading HOW TO DO IT and are self explanatory but will require some degree of familiarisation by the user.

Additional information too difficult to depict diagrammatically has been included as NOTES for each species.

CONTENTS

	Pages
GLOSSARY (What the pictures mean)	1 - 4
PORT JACKSON (<i>Acacia saligna</i>)	5 - 6
ROOIKRANS (<i>Acacia cyclops</i>)	7 - 8
GOLDEN WATTLE (<i>Acacia pycnantha</i>)	9 - 10
BLACK WATTLE (<i>Acacia mearnsii</i>)	11 - 12
LONGLEAF WATTLE (<i>Acacia longifolia</i>)	13 - 14
BLACKWOOD (<i>Acacia melanoxylon</i>)	15 - 16
STINKBEAN (<i>Passerianthus lophantha</i>)	17 - 18
SESBANIA (<i>Sesbania punicia</i>)	19 - 20
SPANISH BROOM (<i>Spartium junceum</i>)	21 - 22
HAKEAS (<i>Hakea</i> spp)	23 - 24
PINES (<i>Pinus</i> spp)	25 - 26
GUMS (<i>Eucalyptus</i> spp)	27 - 28
MYRTLE (<i>Leptospermum laevigatum</i>)	29 - 30
MANATOKA (<i>Myoporum tenuifolium</i>)	31 - 32
MATCHWOOD POPLAR (<i>Populus x canescens</i>)	33 - 34
PITTISPORUM (<i>Pittisporum undulatum</i>)	35 - 36
CHERRY PIE (<i>Lantana camera</i>)	37 - 38
ACKNOWLEDGEMENTS	39
BACKGROUND	40
ABOUT THIS HANDBOOK	40

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