Blackberry Control Manual

Alyssa Schembri (NSW DPI)

Weeds of National Significance

Birgitte Verbeek (NSW DPI)

Management and control options for blackberry (Rubus spp.) in Australia

State Government Victoria
Department of Primary Industries

National Blackberry Program

Australian Government

This manual has been produced by NSW Department of Primary Industries, the Blackberry Technical Reference Group and the National Blackberry Taskforce, with funding from the Australian Government. It is part of the Weeds of National Significance (WoNS) National Blackberry Program, coordinated by the National Blackberry Coordinator, Department of Primary Industries, Victoria.

For further information on the WoNS National Blackberry Program visit the Weeds Australia website at
www.weeds.org.au/WoNS/blackberry

Copies of this manual can be downloaded or ordered from the above website.

Disclaimer

Published by the Victorian Government Department of Primary Industries, June 2009.

ISBN 978 1 74217 513 3 (print)
978 1 74217 514 0 (online)

This publication should be cited as:
NSW Department of Primary Industries Weed Management Unit. (2009). Blackberry control manual: Management and control options for blackberry (*Rubus* spp.) in Australia. Department of Primary Industries, Victoria.

Blackberry Control Manual

Management and control options for blackberry (*Rubus* spp.) in Australia

Weeds of National Significance
June 2009

This manual has been produced by NSW Department of Primary Industries, the Blackberry Technical Reference Group and the National Blackberry Taskforce with funding from the Australian Government *Defeating the Weed Menace* program, and supported by Department of Primary Industries, Victoria.

State Government Victoria Department of Primary Industries

National Blackberry Program

Australian Government

Acknowledgments

Production of this manual was coordinated by the NSW Department of Primary Industries Weed Management Unit.

Principle authors and compilers in alphabetical order:

Annette McCaffery, NSW Department of Primary Industries

Alyssa Schembri, NSW Department of Primary Industries

Birgitte Verbeek, NSW Department of Primary Industries

Miriam Verbeek, Consultant, Profit Foundation Pty Limited, NSW

Contributing authors in alphabetical order.

Tony Cook, NSW Department of Primary Industries

Stephen Johnson, NSW Department of Primary Industries

Mark Scott, NSW Department of Primary Industries

Contributions (including technical input, review, comments and photos) in alphabetical order.

National Blackberry Taskforce Project Steering Committee

Alex Arbuthnot, Chair, National Blackberry Taskforce

Kiowa Fenner, Department of Primary Industries and Water, Tasmania

Graham Hardwick, Department of Primary Industries, Queensland

Shauna Potter, Department of Water, Land and Biodiversity Conservation, SA

Penny Richards, formerly National Blackberry Coordinator

Others

Dr Robin Adair, Department of Primary Industries, Victoria

Nigel Ainsworth, Department of Primary Industries, Victoria

Christopher Auricht, Land Systems, SA

Jeanine Baker, Bureau of Rural Sciences, Department of Agriculture, Fisheries and Forestry

Bill Barker, Department for Environment and Heritage, SA

Robyn Barker, Department for Environment and Heritage, SA

Ian Bate, East Gippsland Shire Council, Victoria

Marion Bennett, NSW Department of Primary Industries

Max Beukers, Department of Environment and Climate Change, NSW

Ian Borrowdale, Shoalhaven City Council, NSW

Neil Boyd, Orange City Council, NSW

Rachel Butterworth, Department of Environment and Climate Change, NSW

John Campbell, Macspred Australia

Edwina Davies-Ward, Department of Environment and Conservation, WA

Peter Ellison, Tumut Shire Council, NSW

Ken England, Department of Environment and Climate Change, NSW

Dr Kathy Evans, University of Tasmania

Bill Fitzgerald, West Shear Rural Contracting, Bathurst, NSW

Lee Fontanini, Warren Catchments Council, WA

Jonah Gouldthorpe, Department of Natural Resources, Environment, the Arts and Sport, NT

Richard Greenhill, Hobart City Council, Tasmania

Graham Harding, Eurobodalla Shire Council, NSW

Barry Hardwick, NRM South, Tasmania

Anne Herbert, Bega Valley Shire Council, NSW

John Hosking, NSW Department of Primary Industries

Cath Ireland, Department of Environment and Climate Change, NSW

Mikala Jones, Department of Environment and Climate Change, NSW

Annie Johnson, NSW Department of Primary Industries

Christopher Love, Dow AgroSciences

Michael Maconachie, Parks, Conservation and Lands, ACT

Alan McKay, Department of Primary Industries, Victoria

Paul McPherson, Tumbarumba Shire Council, NSW

John Moore, Department of Agriculture and Food, WA

Dr Louise Morin, CSIRO Entomology, ACT

Paul Norquay, University of Ballarat, Victoria

Franz Peters, Department of Environment and Climate Change, NSW

Col Plater, Dow AgroSciences

Alexandra Poole, Department of Primary Industries, Victoria

Andrew Reeves, Department of Agriculture and Food, WA

Michael Reid, Department of Primary Industries, Victoria

Julie Robert, formerly Coordinator, Bannister Creek Catchment Group, WA

Stuart Roberton, Department of Primary Industries, Victoria

Phil Rowe, Australian Rubus Growers Association, Victoria

Craig Saunders, Parks and Wildlife Service, Tasmania

John Scott, CSIRO Entomology

Arthur Sholtz, Department of Sustainability and Environment, Victoria

Roger Smith, Orange City Council, NSW

Andrew Storrie, NSW Department of Primary Industries

Steve Taylor, Parks, Conservation and Lands, ACT

Elissa van Oosterhout, NSW Department of Primary Industries

Damian Wall, North East Blackberry Action Group, Victoria

Thomas White, Greater Hume Shire Council, NSW

Paul Yeoh, CSIRO Entomology, WA

Case study contributors

Information for the case studies included in this manual was supplied by the following people:

Impact of blackberry

Mikala Jones, NSW National Parks & Wildlife Service

Importance of blackberry identification

Peter Ellison, Tumut Shire Council, NSW

A community approach to developing a blackberry management plan

Stuart Roberton, Department of Primary Industries, Victoria

Importance of site assessment

Ken England, Department of Environment and Climate Change, NSW

Mapping of blackberry in the Nungatta Valley, NSW

Max Beukers, **Rachel Butterworth** and **Franz Peters**, NSW National Parks & Wildlife Service

Dispersal of blackberry seeds by emus and foxes

Paul Yeoh, CSIRO Entomology, WA
Lee Fontanini, Warren Catchments Council, WA

To retreat or not

Julie Robert, formerly Coordinator, Bannister Creek Catchment Group, WA

Consider the long-term effects when selecting herbicides

Lee Fontanini, Warren Catchments Council, WA

The Western Australia experience

John Moore, Department of Agriculture and Food, WA

Tumbarumba Shire Council

Paul McPherson, Tumbarumba Shire Council, NSW
Birgitte Verbeek, NSW Department of Primary Industries

Examples of using herbicides to control blackberry

John Moore, Department of Agriculture and Food, WA

Use of the splatter gun

Ken England, Department of Environment and Climate Change, NSW

The Spraying Mantis

John Moore, Department of Agriculture and Food, WA

The Maatsuyker Island experience

Craig Saunders, Tasmania Parks and Wildlife Service

Improving access for controlling blackberry

Thomas White, Greater Hume Shire Council, NSW

Huonville Landcare Group

Richard Greenhill, Huonville Landcare Group, Tasmania

Manual removal of blackberry on a *Melaleuca* floodplain

Julie Robert, formerly Coordinator, Bannister Creek Catchment Group, WA

Using goats for blackberry control

Roger Smith and **Neil Boyd**, Orange City Council, NSW

Burning blackberry

Michael Maconachie, Parks, Conservation and Lands, ACT

Outcomes of biological control in Victorian studies

Paul Yeoh, CSIRO Entomology, WA

Integrating biological control with chemical control methods

Paul Yeoh and **John Scott**, CSIRO Entomology, WA
Lee Fontanini, Southern Forests Landcare, WA

Integrating methods to control a range of blackberry species

John Moore and **Andrew Reeves**, Department of Agriculture and Food, WA

An example of blackberry management in practice

Rachel Butterworth, **Franz Peters** and **Phil Reichelt**, Department of Environment and Climate Change, NSW

Foreword

The manual will be a valuable guide for the management and control of the weedy blackberry species in Australia.

Blackberry has been recognised as a Weed of National Significance (WoNS) in Australia because of its high degree of invasiveness, its aggressive spread, and its economic and environmental impacts. Blackberry seriously threatens both agricultural and natural ecosystems. It is estimated that annual primary production losses and blackberry control cost at least $70 million (CRC 2006).

For successful blackberry management in Australia, the greatest need is to understand that there are 26 introduced *Rubus* species in Australia. Although blackberry, as a long-established weed, may have reached the limits of its potential range in Australia, some individual species may spread further within these climatic limits. For successful control and management of this weed it is important that we are able to recognise the different species. The development of the Blackberry Identification CD-ROM by Robyn and Bill Barker of the Department for Environment and Heritage, South Australia was a valuable step forward.

The WoNS National Blackberry Taskforce recognises that the challenges for blackberry management are to prevent further spread of the blackberry species, contain existing infestations, and rehabilitate treated areas to prevent reinfestation. To achieve success in management it will also be essential that effective biological controls continue to be developed. We will need to be innovative in our future research programs.

Designed to help provide effective management solutions for blackberry within the context of integrated weed management, this manual brings together detailed information about the plant itself, as well as best practice information about existing control and management options. By reading this document you will discover that there is no one best method for control; instead, there is a range of factors that need to be considered and weighed up for each particular situation.

This manual is a living document that will be reviewed and updated as we gain new knowledge and a better understanding of how to control blackberry and prevent its spread. As new information becomes available, we will endeavour to place it on our web page (**www.weeds.org.au/WoNS/blackberry**) so that you have the most up-to-date information at your finger tips.

The National Blackberry Taskforce is aware that the task ahead to control and manage this weed is formidable, but we will only win if we give it a go.

A very big thanks to all the people who have contributed to developing the manual.

Alex Arbuthnot AM

Chair, National Blackberry Taskforce

A guide to using this manual

This manual is designed to provide current information on blackberry best practice management for land managers, weeds officers, extension services and others involved in the management of blackberry.

The information presented is based on published information, existing research and the experiences of individuals and organisations currently managing blackberry in Australia.

The manual is divided into six parts that are colour coded to help access information quickly. A summary page is provided at the start of each section to give the reader an overview of the information contained in the section.

All key references for this manual are contained in Part 6 (p. 78).

The six parts of this manual

Part 1:
Blackberry profile

- an overview of blackberry in Australia
- the problems, benefits and costs of blackberry
- the current and potential distribution of blackberry in Australia
- a description of the physical characteristics, life cycle, reproduction and spread of blackberry.

Part 2:
Identification of blackberry (*Rubus*) species in Australia

- an overview of the *Rubus* genus in Australia
- a list of all known *Rubus* species present in Australia
- information to help differentiate between species in the *Rubus* genus
- the importance of identifying *Rubus* species.

Part 3:
Developing a blackberry management plan

- an outline of the steps involved in developing a blackberry management plan:
  - Assess the problem.
  - Prioritise the areas for management.
  - Set goals.
  - Prepare, document and implement an integrated plan.
  - Monitor, record, retreat and rehabilitate.

Part 4:
Blackberry control practices

- an overview of the control practices available for blackberry:
  - herbicides
  - physical methods
  - biological control.

Part 5:
An example of blackberry management in practice

- an example of how the information presented throughout the manual can be used in practice to deliver positive weed management and environmental and social outcomes.

Part 6:
Further information

- references, glossary and acronyms
- appendices are attached at the end of the manual.

Contents

Case studies

The following case studies can be found throughout the manual and provide examples of how to implement the principles recommended within each part.