



Weeds of National Significance





National best practice management manual for gamba grass (*Andropogon gayanus*)





Gamba grass

National best practice management manual for gamba grass (*Andropogon gayanus*)

Weeds of National Significance 2024

© Commonwealth of Australia 2024

Ownership of intellectual property rights

Unless otherwise noted, copyright (and any other intellectual property rights) in this publication is owned by the Commonwealth of Australia.

Creative Commons licence



All material in this publication is licensed under a Creative Commons Attribution-Non Commercial-No Derivatives 4.0 International License except content supplied by third parties, logos and the Commonwealth Coat of Arms.

Inquiries about the licence and any use of this document should be emailed to copyright@agriculture.gov.au.

Cataloguing data

This publication (and any material sourced from it) should be attributed as: Sheehan, M, Potter, S. (2024). National best practice management manual for gamba grass (*Andropogon gayanus*). Department of Agriculture, Fisheries and Forestry, Canberra. CC BY-NC-ND 4.0.

ISBN 978-0-6456718-6-5 (pdf) ISBN 978-0-6456718-7-2 (print)

This publication is available at weeds.org.au

Acknowledgements

This publication was funded by the Department of Agriculture, Fisheries and Forestry.

This publication was produced by Wild Matters Pty. Ltd.

Wild Matters Pty. Ltd. 10 Templeton Street Castlemaine Vic 3450

Web: wildmatters.com.au

Cover images: Front – Glenn Campbell (fire), Matt Sheehan (gamba grass inflorescence); Back – NESP (invasion), Rowena Eastick (foliar spraying)

Design and typeset by R.G. and F.J. Richardson, Melbourne, Victoria

Acknowledgement of Country

We acknowledge the Traditional Custodians of Australia and their continuing connection to land and sea, waters, environment and community. We pay our respects to the Traditional Custodians of the lands we live and work on, their culture, and their Elders past and present.

Disclaimer

The views and opinions expressed in this publication do not necessarily represent the views of the Australian Government or the portfolio ministers for the Department of Agriculture, Fisheries and Forestry.

The content of this publication does not constitute advice to any third party. Although due care and skill has been applied in the preparation and compilation of the information and data in this publication, no reliance may be placed on it by any other party. No representation expressed or implied is made as to the currency, accuracy, reliability, completeness, or fitness for purpose of the information contained in this publication. The reader should rely on their own inquiries to independently confirm any information and comment on which they may intend to act.

The Commonwealth of Australia, its officers, employees, agents and the other parties involved in creating this publication disclaim, to the maximum extent permitted by law, responsibility to any other party for any liability, including liability for negligence and for any loss, damage, injury, expense or cost incurred by any person as a result of accessing, using or relying upon any of the information or data in the publication.

Acknowledgements

Principal authors and compilers

Matt Sheehan, Wild Matters Pty. Ltd.

Shauna Potter, Wild Matters Pty. Ltd.

Case study and chapter contributors

ACCESS (Australian Centre for Culture, Environment, Society and Space)

Diego Alvarez, formerly Territory Natural Resource Management

Susanne Casanova, Territory Natural Resource Management

David Connely, Tipperary Station, NT

Djurrubu Rangers, NT

Steve Dwyer, Department of Tourism and Hospitality, NT

Roderick Edmonds, Department of Tourism and Hospitality, NT

Darryn Higgins, Cook Shire Council, Qld

Cameron Heeb, Douglas Daly Research Farm, NT

Jamie Marschall, Douglas Daly Research Farm, NT

Natalie Rossiter-Rachor, National Environmental Science Program (NESP) Resilient Landscapes Hub

Samantha Setterfield, University of Western Australia

Tim Schatz, Department of Agriculture and Fisheries, NT

John-Paul Slaven, Department of Primary Industries and Regional Development, WA

Rachael Thurlow, Territory Natural Resource Management

Valuable support, comments, information and/or review provided by

National Gamba Grass Reference Group

Jennifer Atchison, University of Wollongong, NSW (JA acknowledges funding from the Australian Research Council FT200100006)

Paul Brown, Napranum Aboriginal Shire Council, Qld

Susanne Casanova, Territory Natural Resource Management

John Clarkson, formerly Queensland Parks and Wildlife Service

Rowena Eastick, formerly Territory Natural Resource Management

Emily Fagg, Northern Territory Cattlemen's Association

Keith Ferdinands, Northern Land Council, NT

Michelle Franklin, Department of Lands, Planning and Environment, NT

Shelley Inglis, Department of Lands, Planning and Environment, NT

Cameron JAWAI, Napranum Aboriginal Shire Council, Old

Natalie Rossiter-Rachor, National Environmental Science Program (NESP) Resilient Landscapes Hub

Travis Sydes, Far North Queensland Regional Organisation of Councils

Wayne Vogler, Department of Primary Industries, Qld

Others

Emma Burcher, Department of Lands, Planning and Environment, NT

Jan Carson, South Endeavour Trust, Qld

Pauline Cass, Gamba Grass Roots, NT

Dave Chemello, Department of Biodiversity, Conservation and Attractions, WA

Natasha Clayton, Northern Territory Cattlemen's Association

Chris Collins, Department of Agriculture and Fisheries, NT

Louis Elliott, Department of Lands, Planning and Environment, NT

Leasie Felderhof, Firescape Science, Qld

Laura Fernández, Wild Matters Pty. Ltd., NSW

Darryn Higgins, Cook Shire Council, Qld

Raine Hitch, Rio Tinto, Qld

Kate Hodge, Hodge Environmental, Qld

Tim Hughes, South Endeavour Trust, Qld

Louise Kean, Department of Tourism and Hospitality, NT

Des Land, Rio Tinto, Qld

Robert Millar, Queensland Parks and Wildlife Service

Xav Murray, South Endeavour Trust, Qld

Andy Peart, Weedwalkers Top End Landcare Group, NT

Tom Price, Northern Land Council, NT

Farzin Shabani, Macquarie University, NSW

Andrew Storrie, Agronomo, SA

Jane Thomas, Jane Thomas Science Communication, NT

John Virtue, JG Virtue Biosecurity Services Pty. Ltd., SA

John Witheridge, South Endeavour Trust, Qld

Additional information sources

The authors would like to give special recognition to the work of the former national coordinator for gamba grass, Nathan March. During his time as national coordinator, Nathan created networks, compiled information, raised awareness and promoted best practice management of gamba grass. The information, knowledge and networks established by Nathan and the former national gamba grass taskforce were heavily drawn upon in the development of this manual.

Contents

Acknowledgements	iii
Using this manual	vii
Chapter 1 Understanding gamba grass and its impacts	1
What is gamba grass?	1
Where does gamba grass grow?	6
Gamba grass life cycle	9
Reproduction and spread	10
Gamba grass establishment	14
Impacts of gamba grass	14
Chapter 2 Setting yourself up for success	
Work to a plan	23
Step 1. Assess your gamba grass situation	25
Step 2. Define your management objectives and priorities	32
Step 3. Develop your plan	35
Step 4. Implement your plan	36
Step 5. Review your plan annually	37
Better together: build networks and shared objectives to achieve landscape-scale control	39
Chapter 3 Managing gamba grass	43
Choosing a management option	44
Prevention	48
Surveillance	55
Control methods	56
Other management tools	73

Contents

Chapter 4 Case studies	85
Case study 1 Gamba grass in Western Australia: eradication is in reach	85
Case study 2 Surveying and planning: keys to successful eradication of a historical gamba grass infestation at Mudginberri, Mirarr Estate, Kakadu National Park	89
Case study 3 Helping our neighbours: managing gamba grass across catchments, agencies and tenures	95
Case study 4 Managing gamba grass using rotational grazing in the Douglas Daly, NT	100
Case study 5 New ways to manage gamba grass and fire in the NT's Mary River National Park	104
Chapter 5 Further information	109
Co-occurring grasses	109
Herbaria contact information	121
Additional planning information	122
Safety and welfare information	127
Additional management tools	128
Herbicide Treatment Record Sheet	131
References	132
	SP Resilient Landscapes Hub

Using this manual

Who should use this manual?

This manual has been written to assist land managers with responsibility for, or general interest in, managing gamba grass (*Andropogon gayanus*). This manual is intended to help people make decisions about gamba grass management in the context of broader land management in northern Australia, by providing a guide based on current knowledge and understanding of best practice. It's designed to support other valuable resources that are available at the state/territory, regional and local government levels.

Where does the information come from?

The information in this manual has been sourced from published material, existing research and reviews by technical experts. It also incorporates information gathered at workshops and meetings held with individuals and organisations managing gamba grass throughout northern Australia in 2022 and 2023.

This manual aims to provide a synthesis of the most up-to-date information on best practice management of gamba grass. However, we acknowledge that our understanding of gamba grass spread, impacts and management will continue to improve with new research and adaptive management.

How to use this manual

This manual has been designed to allow easy access to information and provide the necessary knowledge and tools to successfully manage gamba grass.

Arranged in five stand-alone yet complementary chapters, the manual presents a guide to the ecology and impacts of gamba grass (Chapter 1), how to plan a gamba grass management program (Chapter 2), how to reduce the spread of gamba grass and manage its impacts (Chapter 3) and case study



Strategy and policy context

Gamba grass is one of 32 Weeds of National Significance (WoNS). These species are identified as nationally significant based on assessments of their invasiveness, potential for spread, and environmental, social and economic impacts. WoNS require coordinated and strategic management to prevent, eradicate, contain and minimise their impact. The Gamba grass national strategic plan 2012–17 was developed with the goals of (i) preventing new infestations from establishing, (ii) ensuring established infestations are under strategic management and (iii) increasing capacity to manage gamba grass (Australian Weeds Committee, 2013). Further information on WoNS can be found at the Weeds Australia website.

Gamba grass is listed as a Key Threatening Process under the Australian *Environment Protection and Biodiversity Conservation Act 1999*. A national threat abatement plan outlines the priority actions required to reduce the threat gamba grass poses to biodiversity of northern Australia. Gamba grass is also listed as one of the key threats to Australia's biodiversity in the national *Threatened species action plan 2022–2032*, which has a goal of reducing the area of gamba grass by 2026.

examples of how gamba grass is being managed across northern Australia (Chapter 4). Chapter 5 provides sources of further information and supporting material that may be useful.

It's important that the information provided in this manual is adapted by individuals to reflect their own environmental, financial and social circumstances and any legislative management requirements that may apply. Always seek local advice in planning weed control on your property or the sites you manage.



Gamba grass control, Cape York Peninsula, Queensland.

Summary of the five chapters

1. Understanding gamba grass and its impacts

- identification
- invaded habitats and distribution
- life cycle
- impacts



2. Setting yourself up for success (planning)

- the importance of planning
- how to prioritise areas for control
- how to develop a management plan



3. Managing gamba grass

- management principles and challenges
- choosing a control method
- preventing weed entry and spread
- physical, herbicide and other control methods



4. Case studies

- what other land managers are doing
- applying integrated weed management
- overcoming challenges
- practical tips and learnings



5. Further information

- identification of co-occurring grasses
- additional planning information
 - declaration status of gamba grass in Australia
 - planning templates, evaluation question and health and safety considerations
- additional management tools
 - useful contacts
 - herbicide use, training and certification
- references