



NEWP assessment report

Environment and Invasives Committee

© Commonwealth of Australia 2026

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 (referred to as the Commonwealth).

Creative Commons licence

All material in this publication is licensed under a [Creative Commons Attribution 4.0 International Licence](https://creativecommons.org/licenses/by/4.0/) except content supplied by third parties, logos and the Commonwealth Coat of Arms.



Cataloguing data

This publication (and any material sourced from it) should be attributed as: Environment and Invasives Committee 2026, *NEWP assessment report*, Department of Agriculture, Fisheries and Forestry, Canberra, CC BY 4.0.

This publication is available at weeds.org.au/national-established-weed-priorities-newp.

Department of Agriculture, Fisheries and Forestry
GPO Box 858 Canberra ACT 2601
Telephone 1800 900 090
Web agriculture.gov.au

Disclaimer

The Australian Government acting through the Department of Agriculture, Fisheries and Forestry has exercised due care and skill in preparing and compiling the information and data in this publication. Notwithstanding, the Department of Agriculture, Fisheries and Forestry, its employees and advisers disclaim all 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 on any of the information or data in this publication to the maximum extent permitted by law.

Acknowledgement of Country

We acknowledge the continuous connection of First Nations Traditional Owners and Custodians to the lands, seas and waters of Australia. We recognise their care for and cultivation of Country. We pay respect to Elders past and present, and recognise their knowledge and contribution to the productivity, innovation and sustainability of Australia's agriculture, fisheries and forestry industries.

Version Control

This report was originally published on 30 July 2026. This version, published 26 August 2026, includes a minor update to change "Olives" to "Wilding olives", to more clearly describe the focus on unmanaged wild/feral Olives and differentiate from cultivated olive groves.

Contents

Executive summary	1
Nomination and assessment process	1
Results	2
Next steps	4
Background.....	5
Weeds in Australia.....	5
National Established Weed Priorities	5
Weeds of National Significance	6
NEWP Governance	8
Project team	8
National Established Weed Priorities Steering Group.....	8
Environment and Invasives Committee and Weeds Working Group.....	8
National Biosecurity Committee	8
Overview	9
EOI and nomination.....	9
Preliminary assessment	10
Detailed assessment	12
Co-investment and implementation.....	36
Appendix A: Detailed assessment process.....	37
Nationally significant negative impacts.....	37
Feasibility of management	40
Benefits from national coordination	41
Appendix B: Summary of evidence base: species that met the criteria to be considered a national established weed priority	43
African lovegrass (<i>Eragrostis curvula</i>)	44
Amazon frogbit (<i>Limnobium laevigatum</i>).....	47
Buffel grass (<i>Cenchrus ciliaris</i>)	51
Siam weed (<i>Chromolaena odorata</i>).....	55
Arum lily (<i>Zantedeschia aethiopica</i>)	58
Giant rat's tail grass (<i>Sporobolus pyramidalis</i>)	61
Sea spurge (<i>Euphorbia paralias</i>).....	65
Spanish heath (<i>Erica lusitanica</i>).....	68
Calotrope (Rubber bush) (<i>Calotropis procera</i>)	71
Harrisia (<i>Harrisia martinii</i>)	74

Neem tree (<i>Azadirachta indica</i>).....	77
Tropical soda apple (<i>Solanum viarum</i>)	80
Wilding olive (<i>Olea europaea</i>)	83
Ox-eye daisy (<i>Leucanthemum vulgare</i>)	86
Wandering trad (<i>Tradescantia fluminensis</i>)	89
Appendix C: Summary of evidence base: species that did not meet national significance criteria...	92
Blue periwinkle (<i>Vinca major</i>)	93
Broad-leaf privet (<i>Ligustrum lucidum</i>).....	96
Camphor laurel (<i>Cinnamomum camphora</i>).....	99
Coast beach daisy (<i>Arctotheca populifolia</i>)	102
Common mother-of-millions (<i>Bryophyllum delagoense</i>)	105
Fountain grass (<i>Cenchrus setaceus</i>).....	108
Geraldton carnation weed (<i>Euphorbia terracina</i>)	111
Glory lily (<i>Gloriosa superba</i>)	114
Groundsel bush (<i>Baccharis halmifolia</i>).....	117
Italian buckthorn (<i>Rhamnus alaternus</i>).....	120
Mickey mouse plant (<i>Ochna serrulata</i>)	123
Onion weed (<i>Asphodelus fistulosus</i>).....	126
Sticky nightshade (<i>Solanum sisymbriifolium</i>).....	128
Willows cactus (<i>Cereus uruguayanus</i>)	131
Appendix D: Species nominated.....	134
Appendix E: Probity and use of information	136
Probity	136
Use of information.....	136
Glossary.....	137

Tables

Table 1 Types of organisations involved in the nomination process	10
Table 2 Nominations recommended not to proceed to detailed assessment.....	12
Table 3 Summary of the prioritisation results for the 15 species that met the criteria to be considered as a national established weed priority	18
Table 4 The 14 nominations that did not meet national significance criteria, showing results for each detailed assessment component and reason where criteria were not adequately met.....	29
Table 5 Scoring scale for impact questions	39

Executive summary

This assessment report presents a compilation of the nomination and assessment processes and prioritisation results for the initial phase of the [National Established Weed Priorities](#) (NEWP) initiative. This was a prioritisation process to determine new national established weed priorities.

The NEWP is an initiative of the cross-jurisdictional National Biosecurity Committee's (NBC) Environment and Invasives Committee (EIC). It is being guided by the NEWP Steering Group (SG), made up of industry, community and government representatives.

The aim of NEWP is to enhance weed management across Australia, recognising both the significant burden invasive plant species place on land managers and the opportunity to contain and reduce harmful weed impacts.

Through the nomination process for nationally significant weeds, the EIC sought to identify non-native weeds that:

- 1) cause the most significant negative impacts (current and potential) on Australia's natural environment, agricultural productivity, cultural values or community spaces
- 2) have feasible management options to reduce these negative impacts
- 3) have strong benefits and stakeholder support for taking a nationally coordinated approach to containing the species' spread and improving its management.

The beneficial uses of any species were also identified, with consideration of possible strategies to minimise negative impacts of a species while retaining its beneficial uses.

The assessment process was implemented as per the NBC [National Framework for the Management of Established Pests and Diseases of National Significance](#) (EPDNS).

Nomination and assessment process

The nomination and assessment process involved four steps:

- 1) expression of interest
- 2) nomination
- 3) assessment (preliminary and detailed)
- 4) review and approval.

Nominations were assessed as described in the [Guide to nominating a nationally significant weed](#). Thirty-five nominations of weeds or groups of closely related weeds, representing 50 species in total, were received through the open nomination process, which ran from October 2024 to January 2025.

Over 265 organisations engaged in the nomination process as either the lead or a group member, or by providing a letter of support for the nomination.

There were two steps to the assessment process: a preliminary assessment and a detailed assessment. Of the 35 nominations, the preliminary assessment identified 29 species that satisfied the requirements to proceed to the detailed assessment stage.

Detailed assessments were coordinated by the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) with assessments undertaken by a cross-sectoral panel of experts and state and territory government representatives. The detailed assessment process ran from March 2025 to November 2025.

The detailed assessment process (ABARES, 2026) had three component assessments, aligning to the three national significance criteria in the EPDNS:

- 1) Nationally significant negative impacts: an assessment of a species' invasiveness, potential distribution and negative impacts (current and potential).
- 2) Feasibility of management: an assessment of the current management gaps for the weed and feasibility (including benefits and social acceptability) of potential management solutions.
- 3) Benefits from national coordination: a qualitative assessment to determine if there are sufficient benefits to taking a nationally coordinated approach to address the weed.

All three components were considered equally for each species. A species needed to satisfy criteria within all three components to be considered nationally significant.

Results and information collated in the three assessments, and additional evidence and advice from the NEWP SG and Weeds Working Group (WWG), provided the evidence base to determine which species met the national significance criteria and to develop thresholds for prioritising. Each species was considered against the assessment process on its own merit. Species were prioritised within and across each component (nationally significant negative impacts, feasibility of management and benefits from national coordination), based on the degree to which they met that criterion.

The final determination was based on a deliberative process conducted by the NEWP SG and WWG, drawing on the evidence base. Considering results for all three components together, the species were categorised into ranked groups based on their relative performance against all three criteria.

Results

Of the 29 species assessed in the detailed assessment, 15 sufficiently met the three national significance criteria to be considered for inclusion as a national established weed priority. The remaining 14 species did not meet national significance criteria and therefore were not recommended for consideration as national established weed priorities.

The 15 species were categorised into ranked groups based on their relative performance against all three criteria and the level to which they met each of the three national significance criteria. All species within a group are considered to have equal merit and are therefore listed alphabetically within the ranked groups below.

Group 1: Nationally significant negative impacts, assessed as having high current and/or potential national level negative impacts by majority of experts. There are many feasible actions that would improve management and high benefits from national coordination.

- African lovegrass (*Eragrostis curvula*)
- Amazon frogbit (*Limnobium laevigatum*)
- Buffel grass (*Cenchrus ciliaris*)*
- Siam weed (*Chromolaena odorata*)

Group 2: Nationally significant negative impacts, with threshold met based on evidence for current and/or potential negative impacts. There are many feasible actions that would improve management and high benefits from national coordination.

- Arum lily (*Zantedeschia aethiopica*)
- Giant rat's tail grass (*Sporobolus pyramidalis*)*
- Sea spurge (*Euphorbia paralias*)
- Spanish heath (*Erica lusitanica*)*

Group 3: Nationally significant negative impacts, with threshold met based on evidence for current and/or potential negative impacts. There are many feasible actions that would improve management and medium benefits from national coordination.

- Calotrope (rubber bush) (*Calotropis procera*)
- Harrisia (*Harrisia martinii*)*
- Neem tree (*Azadirachta indica*)
- Tropical soda apple (*Solanum viarum*)

Group 4: Nationally significant negative impacts, with threshold met based on evidence for current and/or potential negative impacts, but relatively lower negative impacts than above species. There are many feasible actions that would improve management and medium benefits from national coordination.

- Wilding olive (*Olea europaea*)
- Ox-eye daisy (*Leucanthemum vulgare*)
- Wandering trad (*Tradescantia fluminensis*)

*Assessed as the lead species for a nominated group of closely-related weeds. All species are listed in [Appendix B](#) (search by lead species).

Next steps

Approval process

The NBC, through the EIC, will consider the assessment results to agree on the national established weed priorities.

Co-investment and implementation

Government, industry and community organisations will consider co-investing in new national established weed priorities to enable implementation of identified feasible actions to improve management with stakeholders.

For each new national established weed priority, implementation of the identified feasible management actions is dependent on the level of co-investment secured; hence, a species being agreed as a new national established weed priority does not guarantee implementation of the identified feasible actions.

Based on the level of co-investment, the NBC will be asked to consider the appropriate NEWP delivery stream to implement the identified feasible actions for the weed priority. The NEWP program design is flexible and can support collaborative action on each national established weed priority, with or without assigning the Weeds of National Significance (WoNS) label.

The three delivery streams under NEWP are:

- 1) Weeds of National Significance (WoNS) – facilitates nationally coordinated action on priority established weed species.
- 2) National Established Weeds Action List (NEWAL) – facilitates nationally coordinated management of discrete national priority actions.
- 3) Weed Issues of National Significance (WINS) – facilitates nationally coordinated action to develop collective solutions to priority established weed issues.

Further information on the new national established weed priorities, investment and implementation will be communicated on the Weeds Australia [NEWP webpage](#), once available. It is anticipated that it will take some time for governments, community and industry organisations to consider and secure co-investment.

Background

Weeds in Australia

A ‘weed’, for the purposes of this process, means a non-native plant that requires control to reduce its impact on the economy, environment, culture, human health and amenity.

Weeds adversely affect our natural environment, agricultural productivity, cultural values, human health and community spaces. Weeds cost the Australian agricultural industry around \$4 billion AUD annually in production losses and control costs.

Weed management is a shared responsibility between landholders, community, industry and governments.

Many established weeds are distributed across multiple states and territories. Some are only present in one state or territory but have the potential to spread. Slowing the spread of weeds and suppressing (reducing the density of existing infestations) provides net benefits, even when eradication and containment are no longer achievable.

Implementation of actions under the [Australian Weeds Strategy 2017-2027](#), including through WoNS, has demonstrated the benefits that can be realised through national coordinated action.

National Established Weed Priorities

NEWP is a vital mechanism for implementing the Australian Weeds Strategy 2017-2027 and achieving action under the EPDNS.

The policy principles in the EPDNS have informed the NEWP design:

- Principle 1 – The most relevant approach is asset protection, and containment of established weeds.
- Principle 2 – The collaborative approach reflects the shared responsibility and cooperation needed between landholders, community, industry and governments to sustain efforts.
- Principle 3 – Co-investment between government and non-government organisations is sought to support industry and community leadership and actions, resulting in better outcomes.
- Principles 4 and 5 – Research, development and education are key components of NEWP, reflecting the need for innovation to support improvement in control tools and landholders understanding of and compliance with their responsibilities.
- Principles 6 and 7 – Weeds managed under ‘national coordinated action’ will have associated action plans to mitigate impacts and be reviewed in years 3 and 5.

In November 2023, the NBC approved implementation of the initial phase of the NEWP, which firstly focuses on determining new national established weed priorities.

NEWP outcomes

NEWP, through WoNS, WINS and NEWAL actions, aims to achieve the following outcomes for national established weed priorities:

- Land managers effectively contain and suppress priority weeds where they are having a negative impact, facilitated by access to effective tools and training.
- Investment in control tools improves effectiveness of management.
- Coordinated action is supported at the local and regional level, resulting in increased community collaboration that effectively contains and suppresses priority weeds in targeted locations where the species are having negative impacts.
- Information sharing on NEWP strategic actions increases community awareness of the impact of weeds in Australia and benefits are realised through coordinated management.
- First Nations landowners and managers and stakeholder groups are collaboratively working to implement strategic actions for priority weeds.
- Commonwealth, state and territory government programs support land managers to control established weeds, prioritise investment towards priority weeds, contributing to the resources needed for on-ground projects.
- Agricultural productivity improves through more effective control of priority weeds impacting the sector.
- Biodiversity improves through more effective control of priority weeds, including threatened species and ecological communities.
- Reduction in impact on First Nations cultural values through more effective control of priority weeds.

Weeds of National Significance

Under the Australian Weeds Strategy 2017-2027, Australian governments have previously identified 32 WoNS based on their invasiveness, potential distribution, impacts, feasibility of management intervention and benefits from national coordination. A list of 20 WoNS was endorsed in 1999 and a further 12 were added in 2012.

The 32 WoNS are a focus for land managers around the country. Best practice resources to support sustained management by landholders are available on the [Weeds Australia](#) website. The established nature of WoNS means they need ongoing management beyond the period of nationally coordinated action.

Evaluation of previous national coordinated action on WoNS found:

- increased capacity and capability to manage weeds
- partnerships that leveraged support
- improved resources and tools
- community participation

- new incursions of WoNS rapidly detected and contained to prevent further spread.

We are working to build on and increase these benefits by identifying new nationally significant weeds that can benefit from nationally coordinated efforts.

NEWP Governance

Project team

The project team administered the processes outlined in the [Guide to nominating a nationally significant weed](#). The team comprised of staff from the Department of Agriculture, Fisheries and Forestry (DAFF) (including from ABARES and the Environmental Biosecurity Office), and state and territory government weed experts. CSIRO provided support in their agreed capacity as a member of the WWG and the NEWP SG.

National Established Weed Priorities Steering Group

The NEWP SG lead the overall implementation of NEWP. The NEWP SG provide strategic advice to the WWG, which is accountable to the EIC and NBC.

The NEWP SG is cross sectoral and brings together stakeholder views on managing weeds from government (Commonwealth, state, territory and local), industry (agriculture, forestry) and community (First Nations representatives, natural resource management, biodiversity conservation, volunteer groups), with support from the science and research sector. Members of the NEWP SG represent their sector's views based on their experience and involvement in relevant networks.

The NEWP SG oversaw the nomination and assessment process for nationally significant weeds, including reviewing assessment summaries and outcomes, agreeing refinements where needed and making recommendations to the EIC, through WWG.

Environment and Invasives Committee and Weeds Working Group

The EIC, a sectoral committee of the NBC, and the WWG provided recommendations to NBC.

The cross jurisdictional NBC established the EIC, who are responsible for providing national policy leadership on the identification, prevention and management of invasive plant, vertebrate and invertebrate species that adversely impact the environment, economy and community.

National Biosecurity Committee

The NBC will consider the assessment report and recommended national established weed priorities, referred for consideration by the EIC based on outcomes from the assessment process. The NBC will also consider co-investment, with non-government organisations.

The NBC is formally established under the [Intergovernmental Agreement on Biosecurity](#). It is responsible for managing a national, strategic approach to biosecurity threats. The core objective of the NBC is to promote cooperation and coordination between Australian governments.

Overview

The initial stage of the [National Established Weed Priorities](#) initiative involved four steps:

- 1) **Expression of interest (EOI)** – Sought to avoid duplicate nominations and link organisations planning to nominate the same weed or group of closely related weeds.
- 2) **Nomination** – Requested supporting information on the weed or group of weeds for consideration in the assessment.
- 3) **Assessment** – Involved 2 stages:
 - a) preliminary assessment to select approximately 30 nominated weeds
 - b) detailed assessment of weeds that have progressed through the preliminary assessment.
- 4) **Review and approval** – Supported a robust review process for assessments of each component, with oversight and advice from the cross-sectoral NEWP SG and WWG. NBC, through EIC, will consider the assessment results to agree on the national established weed priorities.

EOI and nomination

Government and non-government organisations were invited to submit an EOI to nominate nationally significant weeds under the NEWP initiative. Organisations were encouraged to collaborate with other organisations to submit joint EOIs and nominations.

Organisations with an ABN were eligible to participate and were required to submit their EOI using the online form that was available on the Weeds Australia website.

EOIs had to meet the eligibility criteria below:

- be a single species or small group of closely related species that are similar in life-form and management requirements
- not be native to Australia
- not be under national eradication
- be established in at least one state or territory.

Weeds that met the EOI criteria could then be nominated in Step 2. EOIs were open between 12 August 2024 and 20 September 2024 (a period of 30 working days), with 184 EOIs received. 143 EOIs were submitted as single weed species and 41 EOIs were submitted as a group of species.

Botanists working in herbaria across Australia provided their combined expertise to determine if EOIs met the eligibility criteria and to determine if nominated species groupings were appropriate to proceed as a single nomination. Advice was prepared for the NEWP SG, who approved outcomes of the EOI process.

Of the 184 EOIs, 164 met the eligibility criteria. Five EOIs were ineligible as the species submitted were native to Australia. A further 13 species (in 15 EOIs) were existing WoNS. Advice was provided to organisations that submitted these to not proceed with nominations, as the aim is to identify new national established weed priorities.

Duplicate EOIs for the same species were identified and relevant organisations were notified, to prompt them to work together on nominations. All organisations were notified of the EOI outcome by 7 October 2024 and provided with an overview of the nomination process (Step 2). Where applicable, organisations were provided with advice on species groupings or an explanation of why their EOI was ineligible.

Following completion of the EOI step, a [list of species deemed eligible to proceed to nomination](#) was published on the Weeds Australia website. Organisations that submitted an eligible EOI had until 12 January 2025 to submit their nomination. Reminders were sent during this period. The nomination form requested key information necessary to assess the weed against national significance criteria.

Nominations were received from a diverse range of organisations across a range of sectors. Table 1 below provides a breakdown of the type and number of unique organisations (265) involved in nominations as the lead, group member or by providing a letter of support. While the number of nominations received (35, amounting to 50 species in total – see [Appendix D](#)) was lower than the number of EOIs submitted (184), this was not unexpected given the workload involved in preparing a nomination in comparison to the basic EOI requirements.

Table 1 Types of organisations involved in the nomination process

Organisation type	Number of organisations involved (either as a lead group member or letter of support) across all nominations
Biosecurity group/NRM	28
Community/Volunteer/Landcare group	50
First Nations	16
Government	111
Industry	24
NGO/Not-for-profit	34
Research	2

Of the 35 nominations, 28 nominations were for a single species and 7 nominations were for a group of closely related weeds, amounting to 50 species in total. Two species were deemed ineligible for nomination as they were not submitted in the EOI stage, which left 48 species (including 6 groups of species) eligible for preliminary assessment.

Preliminary assessment

In the first stage of the assessment process, nominations were assessed against the preliminary assessment criteria (see below) to determine those that met the criteria and presented the highest merit to proceed to detailed assessment.

- **Criterion 1:** Potential range of the species.
- **Criterion 2:** Multiple stakeholders are needing to control the species to manage or prevent its impacts.
- **Criterion 3:** Government, industry and/or community organisations, including in more than one state or territory, have documented the species as a priority weed.

- **Criterion 4:** There is sound evidence of significant negative impacts (economic (market), environmental, cultural, social) of the species.
- **Criterion 5:** There is likely to be strong benefits and stakeholder support for taking a nationally coordinated approach to containing the species' spread and improving its management.

The preliminary assessment was completed by 24 assessors from state and territory government agencies. An assessor was assigned to each nomination for initial assessment, followed by a review of the initial assessment by two other assessors (as reviewers).

In addition, the cultural impacts component of all preliminary assessments was reviewed by the First Nations representatives on the NEWP SG to support appropriate consideration of cultural impacts.

As an additional review, and to confirm that the assessments had been undertaken according to the guidance material, CSIRO reviewed a subset of preliminary assessments. This subset focused on species assessed by reviewers affiliated with agencies that had provided letters of support for the nominations, and/or species with positive impacts.

Reviewer feedback was provided to the initial assessor, who considered the feedback and reviewed the original answers, revising the assessments accordingly if relevant.

Following completion of all preliminary assessments, the state and territory assessors met as a group to discuss outcomes and agree on recommendations for which nominations should proceed to detailed assessment. All assessors were provided with access to all nomination forms and preliminary assessments and were given the opportunity to review and raise any questions or concerns. At the meeting, the assessor group agreed on those weeds recommended to proceed to detailed assessment.

The NEWP SG and WWG reviewed the preliminary assessment recommendations and made the final decision on which weeds progressed to detailed assessment. Where a group of species were nominated, the species considered to be the most impactful was selected as the lead to be assessed in the detailed assessment.

Of the 35 nominations, 29 nominations (covering 41 species and 5 groups of weeds) proceeded to detailed assessment. These nominations provided a cross-section of high impact weeds and included agricultural and environmental weeds from all jurisdictions and across the northern tropical, southern temperate, central and eastern and western regions of Australia.

Six nominations were recommended to not proceed to detailed assessment (Table 2). Five nominations did not meet the impact threshold as they were assessed as having only a moderate potential impact in two or fewer domains (economic (market)/environment/social/cultural). The impact threshold provided a clear and consistent cut-off for which nominations were recommended to proceed (or not) to detailed assessment. One nomination was assessed as meeting the impact threshold but not meeting eligibility criterion 3.

Table 2 Nominations recommended not to proceed to detailed assessment

Species	Reason
Navua sedge (<i>Cyperus aromaticus</i>)	A preliminary assessment of the Navua sedge nomination was undertaken but the assessor, reviewers and NEWP project team were unable to find evidence in the nomination form, attachments or online that Navua sedge is listed as a priority by government, industry and/or community organisations in more than one state or territory (Criterion 3). Navua sedge appears to only be a current priority within Queensland and therefore does not meet Criterion 3.
Singapore daisy (<i>Sphagneticola trilobata</i>)	Singapore daisy did not score as high as other nominations against Criterion 4: impact (considering current and potential impact). It was therefore recommended to not proceed to detailed assessment.
Golden crownbeard (<i>Verbesina encelioides</i>)	Golden crownbeard did not score as high as other nominations against Criterion 4: impact (considering current and potential impact). It was therefore recommended to not proceed to detailed assessment.
Coral creeper (<i>Barleria repens</i>)	Coral creeper did not score as high as other nominations against Criterion 4: impact (considering current and potential impact). It was therefore recommended to not proceed to detailed assessment.
Easter cassia (<i>Senna pendula</i> var. <i>glabrata</i>)	Easter cassia did not score as high as other nominations against Criterion 4: impact (considering current and potential impact). It was therefore recommended to not proceed to detailed assessment.
Cockspur coral tree (<i>Erythrina crista-galli</i>)	Cockspur coral tree did not score as high as other nominations against Criterion 4: impact (considering current and potential impact). It was therefore recommended to not proceed to detailed assessment.

The project team notified lead organisations on 24 March 2025 of the outcomes of the preliminary assessment of their nominations and provided reasoning where a nomination did not proceed to detailed assessment.

A list of the twenty-nine nominations that proceeded to detailed assessment and those that did not proceed beyond the preliminary assessment was published on [Weeds Australia](#).

In communicating outcomes from the preliminary assessment on the Weeds Australia website, it was highlighted that some species that were nominated have benefits, for example as pasture grasses, and that it is appropriate that species that have benefits and negative impacts are eligible for consideration within the process, to assess harmful impacts and consider any actions that could improve management. This is consistent with principles underpinning weed management in Australia, described in the [Australian Weeds Strategy 2017-2027](#).

Detailed assessment

ABARES developed a detailed assessment methodology (ABARES, 2026) to assess species against national significance criteria and support identification of the new national established weed priorities, which was endorsed by the NEWP SG and WWG in October 2024.

The detailed assessment process had three assessment components which align with the three national significance criteria in the EPDNS (NBC, 2016):

- 1) **Nationally significant negative impacts:** an assessment of a species' invasiveness, potential distribution and negative impacts (current and potential).
- 2) **Feasibility of management:** an assessment of the current management gaps for the weed and feasibility (including benefits and social acceptability) of potential management solutions.
- 3) **Benefits from national coordination:** a qualitative assessment to determine if there are sufficient benefits to taking a nationally coordinated approach to address the weed.

A species needed to satisfy criteria within all three components.

Further information on the detailed assessment process is provided below and in [Appendix A](#) of this report.

Information provided by organisations in their nomination form was used to undertake assessments, in addition to independent information obtained by assessors.

For each component, assessments were completed by assessors following guidance provided by ABARES (ABARES, 2026), and outputs compiled into a report which was reviewed by the NEWP SG and WWG.

The negative impact assessment was coordinated by ABARES, with assessments undertaken by a cross-sectoral panel of experts. The feasibility of management assessment was coordinated by ABARES with assessments undertaken by state and territory government representatives. The same state and territory government representatives completed the benefits from national coordination assessment with guidance from ABARES and coordination by the project team.

The detailed assessment process ran from March 2025 to November 2025.

Information collated in the three assessments, and additional evidence and advice from the NEWP SG and WWG, provided decision makers with an evidence base to determine which species met the national significance criteria and develop thresholds for prioritising species within each criterion. Each species was considered against the assessment process on its own merit. Species were prioritised within and across each component (negative impact, feasibility of management and benefits from national coordination), based on the degree to which they met that criterion.

The NEWP SG and WWG considered the outputs from each component plus additional evidence obtained from the NEWP SG and WWG members and deliberated to determine the species that met the criteria.

Nationally significant negative impacts

Determining whether a weed has nationally significant negative impacts depended on how impactful it is or could be, how invasive it is, where it currently is, and where it could establish. Consequently, the detailed assessment of nationally significant negative impacts considered three factors: invasiveness, potential distribution and current and potential negative impacts.

While negative impact was used for ranking, the NEWP SG and WWG considered invasiveness as well as current and future distribution in prioritisation. Invasiveness was considered by the NEWP SG to confirm that all prioritised species had invasive characteristics. Further, the NEWP SG used this

information to consider those species that have a higher invasiveness score may have a potential to spread faster, therefore be prioritised over a species that has similar impacts but is less invasive.

Potential distribution was used by the NEWP SG and WWG in their decision making to consider potential for spread. Current and potential distribution maps developed by ABARES were also provided to the expert assessors to support judgement about magnitude and extent of current and potential negative impacts. Assessors were provided appropriate caveats to the consideration of these maps, including the need to consider additional constraints to the species' distribution based on the species' ecological requirements (e.g., soil, land use, other habitat requirements) and invasive characteristics (ability to establish, colonise and disperse).

Invasiveness

ABARES assessed the invasive characteristics of each species. Assessments were reviewed by independent reviewers from state and territory governments, as well as the NEWP SG.

The invasiveness criterion sought to identify characteristics of a weed that enhance its invasiveness, such as its ability to colonise and establish, its growth and competitive ability, reproductive ability, and dispersal (human mediated and natural). An assessment of invasiveness was important to identify weeds that can spread faster and be more difficult to manage where they are present.

All species were assessed to have invasive characteristics (see species summaries at [Appendix B](#) and [Appendix C](#) for further information).

Potential distribution under current and future climate

ABARES assessed the potential distribution of each species under current and future climate. The maps were reviewed by the NEWP SG.

Current distribution maps were developed for each weed using Atlas of Living Australia data verified by the state and territory WWG members, with additional data provided by the jurisdictions where required.

Potential distribution (under current climate) was modelled to inform what percentage of the potential distribution is currently occupied by the species and therefore what its scope is for range expansion.

Potential distribution (under current climate) modelling was undertaken only to assess the broad climatic suitability for the species in Australia, based on temperature and rainfall requirements from Australian and global locations where the species is known to occur. These models did not consider species-specific factors such as land use, soil type and other habitat requirements, which may further constrain the species' distribution.

Negative impacts

A panel of 33 experts (guided by ABARES) assessed the current and potential economic (market), environmental, social and cultural negative impacts of a species. The panel included representation of assessors with a diversity in expert backgrounds including scientists (e.g. ecologists, agronomists, botanists, social scientists) and weed control practitioners (e.g. farmers, park managers, advisors) across relevant stakeholder groups (agriculture, mining, conservation, research, government, Indigenous land management).

The current and potential negative impacts of a species were assessed separately using a semi-quantitative expert elicitation method (ABARES, 2026). Negative impacts were assessed by 4-5 of the independent experts across the four domains:

1) Economic (market) (2 questions):

- (a) negative impact on yield and management inputs – impact on yield including crop, pasture, forestry or other industries; impact on animal production, weeds acting as alternative hosts for pests and diseases, increases in the cost of production or management.
- (b) negative impact on the quality of products which also includes market access

2) Environmental (3 questions):

- (a) negative impact on vegetation structure,
- (b) negative impact on biodiversity
- (c) modification of ecosystem function

3) Social (2 questions):

- (a) negative impact on human physical and mental health
- (b) negative impact on social amenity (including services, infrastructure and non-First Nations cultural heritage)

4) Cultural (3 questions):

- (a) negative impact on First Nations culture and cultural heritage (oral traditions, arts, rituals, ceremonies and knowledge);
- (b) negative impact on traditional subsistence and sustenance resources
- (c) negative impact on place-based heritage

For each question, assessors recorded an impact score and their level of confidence in that score (high, medium or low), for both current and potential impacts. The level of confidence was based on the quality of evidence used by the assessors to make their judgement.

The scores provided by the negative impact assessment were used to rank species within the four impact domains: economic (market), environmental, social and cultural (current and potential). Supporting information such as sensitivity analysis and confidence levels were also provided to the NEWP SG and WWG to help to interpret the results. Supplementary information on the negative impacts was also provided by the NEWP SG and WWG, with both inputs then determining whether each species met the threshold for nationally significant impacts.

The nationally significant impact assessment results report was used as a basis for review, discussion and decision making by the NEWP SG and WWG to agree those species that met the threshold.

The assessment report identified an initial 6 species (Buffel grass, Amazon frogbit, Siam weed, African lovegrass, Neem tree and Tropical soda apple) with sufficient defensible evidence from the negative impact assessment process to meet the nationally significant negative impact criterion, based on the majority of experts assessing their potential negative impact as high impact at national level for at least one impact question within a domain. One of these species (Buffel grass) met this

benchmark for nationally significant current negative impact. Further, the report provided guidance for the NEWP SG and WWG to identify additional species for consideration as meeting the nationally significant negative impact criterion. The suggested reasonable option to consider the top 10 species based on total impact rank for both potential and current negative impact and/or the top 5 species based on current and potential negative impact within each domain was adopted as a starting point (list of 17 species). The NEWP SG considered the results in the report, additional evidence and deliberated on those species where there was sufficient evidence to agree they met the nationally significant impact threshold.

While Groundsel bush, Willows cactus and Common mother-of-millions were in the list of 17 species referred above, the NEWP SG agreed that there was insufficient evidence to support these species having nationally significant negative impacts. The reasons are summarised in Table 4.

Further, the NEWP SG and WWG agreed that Sea spurge, Ox-eye daisy, Spanish heath and Coast beach daisy had sufficient evidence to support nationally significant negative impacts. The assessment results were used as a starting point and were further supplemented with NEWP SG and WWG members providing additional evidence and advice on negative impacts of these species. The NEWP SG and WWG agreed that these species met the threshold for nationally significant negative impacts.

Of the 29 species assessed, the NEWP SG identified 18 species as causing the most nationally significant negative impacts (current and potential) on Australia's agricultural productivity, natural environment, cultural values or community. The following 18 species (in alphabetical order) were considered to meet the criteria for nationally significant impacts: African lovegrass, Amazon frogbit, Arum lily, Broad-leaf privet, Buffel grass, Calotrope (Rubber bush), Camphor laurel, Coast beach daisy, Giant rat's tail grass, Harrisia, Neem tree, Wilding olive, Ox-eye daisy, Sea spurge, Siam weed, Spanish heath, Tropical soda apple and Wandering trad.

Feasibility of management

The feasibility of management assessment was qualitative.

Feasibility of management was assessed in two parts. Part 1 determined whether the species has significant benefits and explored whether there are stakeholders who value the species differently. In such cases, mutually beneficial management solutions were considered in Part 2 of the feasibility of management assessment. Part 2 was a framework that assessed current management gaps for the weed and whether there are feasible potential management solutions. Confidence levels and a traffic light system were used to indicate complexities or issues across assessment questions examining current and potential management solutions, socio-political support, and national coordination. To meet the feasibility of management component, the species needed to have management actions that were feasible, socially acceptable and would benefit from national coordination.

Feasibility of management assessments were completed by state and territory government representatives from the WWG. Feasibility of management assessments were reviewed by a WWG member from a different jurisdiction with no conflicts. A summary of the assessments was compiled by ABARES to assist CSIRO with an independent review of the feasibility of management assessments.

Of the 18 species considered to have nationally significant negative impacts, all met the feasibility of management threshold except for Broad-leaf privet, with reasons provided in Table 4.

Benefits from national coordination

Benefits from national coordination required that there be a clearly demonstrable benefit from a nationally coordinated approach or plan that outlines the action to be undertaken by all responsible parties. A weed may have (or potentially have), significant negative impacts in one or more regions, but would not be considered a nationally significant weed if no particular benefit can be demonstrated by taking a nationally coordinated approach or having a national plan. Confidence levels and the strength of the case for a national strategic plan or approach was considered to inform categorisation as high or medium. Factors were considered such as the compelling need for resources, economical drivers (in terms of avoiding escalating costs), benefits to multiple stakeholders, opportunity to significantly improve management and efficiencies in implementation.

Benefits from national coordination was assessed by the same WWG representatives (or their nominated proxy) as feasibility of management. A panel meeting was held, chaired by a DAFF representative to discuss input on benefits from national coordination assessments and determine the assessment for each species. An independent review of the benefits from national coordination assessments was undertaken by CSIRO.

Of the 17 species considered to have nationally significant negative impacts and feasible actions to improve management, 15 met the benefits from national coordination criterion. Coast beach daisy, Camphor laurel and Broad-leaf privet did not meet the threshold for benefits from national coordination as they did not present a strong case as standalone species. Reasons are summarised in Table 4.

Detailed assessment results

Table 3 provides the comparative results for the 15 eligible species, considering the results from all three assessment components. Table 4 lists the 14 species that did not meet the national significance criteria, along with a summary of why criteria were not adequately met.

Summaries of detailed assessment results for all 29 species are included in [Appendix B](#) and [Appendix C](#).

Table 3 Summary of the prioritisation results for the 15 species that met the criteria to be considered as a national established weed priority

Species summary (drawn from assessment results, additional information provided by NEWP SG and WWG, and information sourced from literature)	Justification from detailed assessment	Areas negatively affected
Group 1: Nationally significant negative impacts assessed as having high current and/or potential national level negative impacts by majority of experts. There are many feasible actions that would improve management and high benefits from national coordination.		
African lovegrass (<i>Eragrostis curvula</i>) is an invasive and long-lived tussock-forming grass. It is valued by some livestock producers as drought fodder. The cultivar <i>Eragrostis curvula</i> cv. Consol has some benefits as it is a more palatable and less weedy pasture (particularly in some NSW areas). Overall, the species has minor economic value and could be managed to support its beneficial use and assist the transition to other grass species. Negative impacts snapshot: • <i>Economic (market)</i>: Has low palatability and can halve carrying capacity in heavy infestations. Control is difficult and expensive. • <i>Environmental</i>: Can negatively impact vegetation structure and biodiversity by forming monocultures, replacing native species. It negatively impacts EPBC listed plants and the endangered Monaro grassland earless dragon (<i>Tympanocryptis osbornei</i>). Alters fire regimes and disrupts nutrient cycling, acting as an ecological transformer. • <i>Cultural</i>: May negatively impact First Nations people by invading ecologically and culturally significant landscapes and may threaten native species tied to traditional knowledge and land management, including cultural burning. A national strategic plan for African lovegrass would focus on preventing further spread and improving management through identified feasible actions listed in Appendix B, including integrated control strategies; best practice guidelines; improving detection and monitoring; training to improve capacity to manage. For implementation, there may be efficiencies in coordinating with Giant rat's tail grass given their similar morphology, impact mechanisms, and some overlapping distribution. African lovegrass is declared in SA, TAS and VIC. African lovegrass is established and is primarily managed at the regional level. Localised management, containment and eradication programs are ongoing in TAS.	• Negative impacts: – In the top 6 species for nationally significant negative impacts; assessed as having potential high negative impact at a national level for environment⁴ by majority of experts. – Current high negative impact at a regional to multi-regional level for environment^{3,4,5}. – Potential high negative impact at a multi-regional to national level for economic (market)¹, environment^{3,5} and culture^{8,9}. • Many feasible actions that would improve management and high benefits in nationally coordinated action.	Jurisdictions: QLD, NSW, ACT, VIC, TAS, SA and WA, with potential to become more widely distributed. Ecosystems and land uses: Grasslands, woodlands, heathlands. Pasture/Grazing. Climates (preferred): Temperate/semi-arid/sub-tropical.
Amazon frogbit (<i>Limnobium laevigatum</i>) is an invasive floating aquatic weed that can form dense mats in dams, lakes and wetlands. It is sometimes valued as an ornamental aquatic plant. Engagement with industry will occur to transition to alternatives and prevent sale/trade of this species. Negative impacts snapshot: • <i>Economic (market)</i>: Can obstruct irrigation channels, hydropower systems and aquaculture operations, and may create contamination risks for organic certification. Control is labour-intensive and costly. Although current infestations are small, the species has high climate suitability in key irrigation regions, posing significant future risk.	• Negative impacts: – In the top 6 species for nationally significant negative impacts; assessed as having potential high negative impact at a national level for economic (market)¹ and environment⁵ by majority of experts. – Current high negative impact at a regional to multi-regional level for environment^{3,4,5}.	Jurisdictions: QLD, NSW, VIC and WA, with potential to spread further in waterbodies throughout all S&Ts within Australia. Ecosystems and land uses:

Species summary (drawn from assessment results, additional information provided by NEWP SG and WWG, and information sourced from literature)	Justification from detailed assessment	Areas negatively affected
<i>Environmental</i>: Can form dense mats that create monocultures, reduce biodiversity, disrupt water flow and nutrient cycling, and threaten sensitive ecosystems such as the Howard Springs and Kakadu floodplains, Barron River catchment and Ord River system. <i>Social</i>: May degrade water quality, create mosquito-breeding habitat, and limit recreation, tourism and access to recreationally significant waterways. <i>Cultural</i>: May degrade wetlands that are culturally important, which may restrict access to sacred sites and displace plants and animals relied on for cultural practices, subsistence and craftsmanship. A national strategic plan for Amazon frogbit would focus on preventing further spread and improving management through identified feasible actions listed in Appendix B, including aligned policy; awareness raising; enhanced surveillance; protection of assets (e.g. Ramsar wetlands), research and development into chemical, mechanical and biological control, understanding knowledge gaps in dispersal and aquarium trade spread routes. The plan would support QLD, NSW, VIC and WA in their management and help to prevent its establishment in NT, SA, ACT and TAS. Amazon frogbit is declared in WA, NSW and NT. In QLD, Amazon frogbit is established and is primarily managed at the regional level. NSW, WA and VIC aim to prevent the establishment of Amazon frogbit and actively manage all known infestations.	– Potential high negative impact at a multi-regional to national level for social⁷ and culture^{9,10}. – Potential high negative impact at a national level for environment^{3,4}. – Scored 2nd highest for difference in current to potential negative impact, suggesting its negative impacts could become much worse. • Many feasible actions that would improve management and high benefits in nationally coordinated action.	Aquatic Aquaculture/ Resource industries. Climates (preferred): Tropical/ subtropical.
Buffel grass (<i>Cenchrus ciliaris</i>)* is an invasive, drought resistant perennial grass. Species has beneficial use to rangeland pastoral situations (land use) and is a highly valuable pastoral fodder for livestock. Estimates of the economic (market) value of beef production from Buffel grass pastures in Queensland are up to \$4.8 billion. Proposed actions would not adversely impact pastoral land use where this species provides benefit. Negative impacts snapshot: <i>Environmental</i>: In native ecosystems, Buffel grass can modify ecosystem functions and outcompete native species, reducing biodiversity and altering fire regimes. Currently, over 30 EPBC Act listed threatened species and ecological communities are negatively impacted or are at risk from Buffel grass invasion. <i>Cultural</i>: Buffel grass invasion can alter landscapes and displace culturally significant plants and animals. It can disrupt Dreaming tracks, storylines, and seasonal cues that are central to place-based oral histories. This may make it difficult for Elders to pass on knowledge in context, weakening intergenerational cultural transmission. Buffel grass can also impede walking on Country and learning through direct experience, with negative impacts on culturally significant species and traditional fire practices. Buffel grass may displace native plants traditionally used for bush foods, medicines, weaving, and tools. Fires fuelled by Buffel grass have destroyed culturally significant features such as rock art, scar trees, stone arrangements, and burial grounds. These cultural impacts are widespread across native ecosystems and culturally significant sites in SA, WA, NT, and parts of QLD and NSW. A national strategic plan for Buffel grass (and the other <i>Cenchrus</i> spp. in this nomination (<i>C. pennisetiformis</i> and <i>C. setiger</i>)) would focus on protecting high-value environmental and cultural assets through identified feasible actions listed in Appendix B, including collaboration on best practice management guidelines in a range of	• Negative impacts: – In the top 6 species for nationally significant negative impacts; assessed as having current and potential high negative impact at a national level for environment^{3,4,5} and culture^{8,9,10} by majority of experts. • Many feasible and socially acceptable actions that would improve management and high benefits in nationally coordinated action.	Jurisdictions: NSW, NT, QLD, SA, VIC and WA. It has a potential to spread further through these jurisdictions and with the potential to grow in ACT. It is not predicted to spread to TAS. Ecosystems and land uses: Grasslands, woodlands, heathlands, roadsides. Climates (preferred): Arid/semi-arid.

Species summary (drawn from assessment results, additional information provided by NEWP SG and WWG, and information sourced from literature)	Justification from detailed assessment	Areas negatively affected
situations and geographies, enhanced surveillance capability to map threats and monitor control work; approach to prioritise and coordinate investment in Buffel grass management in reserves and the Indigenous estate; development of voluntary industry guidelines to minimise spread of Buffel grass from production areas into areas where it creates negative impacts (requiring stakeholder engagement and cooperation at the regional and local level to protect assets valued by the communities); research to address knowledge gaps and develop more effective control methods (excluding biocontrol) and activities to reduce spread along transport corridors and in mining. Efficiencies would be achieved through coordinated actions. The plan would support QLD, NSW, VIC, NT, SA and WA in their management to reduce negative impacts to the environment and First Nations culture, whilst retaining beneficial use of the species for the livestock industry. Further engagement with all stakeholders would be the first step, to find workable solutions together. In SA and NT, Buffel grass is established and is primarily managed at the regional level. Localised management, containment and eradication efforts, particularly in VIC, and in conservation areas of WA and NSW, are ongoing.		
Siam weed (<i>Chromolaena odorata</i>) is an invasive shrub and is widely regarded as one of the world's worst weeds. Australia is one of the few tropical or sub-tropical countries where its full impacts are yet to be realised. It continues to spread to new areas even when under intensive management with current tools. Negative impacts snapshot: • <i>Economic (market)</i>: Can negatively impact yield by invading and outcompeting crops (sugarcane, dry rice), horticulture (banana, pawpaw) and pastures, where it is toxic to livestock, causing deaths and abortions in cattle overseas. Projected management costs for Siam weed across northern and eastern Australia are expected to reach up to \$14 million annually by 2044. It can also impact the quality of fodder. • <i>Environmental</i>: Can smother native vegetation, transform ecosystems (particularly savannahs), increase fire frequency and intensity and already poses a risk to numerous threatened or near-threatened species in QLD and NT (e.g. the endangered southern black-throated finch (<i>Poephila cincta cincta</i>), the Mt Elliott sunsinker (<i>Lampropholis elliotensis</i>), the Atherton Ctenotus lizard (<i>Ctenotus monticola</i>) and the native shrub <i>Kunzea truncata</i>). • <i>Social</i>: Can cause allergies in humans and restrict access to recreation sites. • <i>Cultural</i>: Can damage and restrict access to culturally significant sites and craftsmanship resources. A national strategic plan for Siam weed would focus on preventing further spread and improving on-ground management through identified feasible actions listed in Appendix B, including enhanced surveillance; new management tools; raising awareness; leveraging and optimising resources. The plan would support NT and QLD in their ongoing management of Siam weed and help to prevent its establishment in NSW and WA. Siam weed is declared in QLD, NT, NSW, WA. In QLD and NT, Siam weed is established and is primarily managed at the regional level. NSW and WA aim to prevent the establishment of Siam weed.	• Negative impacts: – In the top 6 species for nationally significant negative impacts; assessed as having potential high negative impact at a national level for economic (market)¹ by majority of experts. – Current medium negative impact at a regional to multi-regional level for environment^{3,4,5}. – Potential high negative impact at a multi-regional to national level for environment^{3,4,5}, social^{6,7} and culture^{8,9,10}. – Scored 3rd highest for difference in current to potential negative impact, suggesting its negative impacts could become much worse. • Many feasible actions that would improve management and high benefits in nationally coordinated action.	Jurisdictions: NT and QLD. Potential to impact NSW, SA and WA. Ecosystems and land uses: Savannah, riparian, coastal, hill slopes, crops/pasture, grazing. Climates (preferred): Tropical/subtropical.

Species summary (drawn from assessment results, additional information provided by NEWP SG and WWG, and information sourced from literature)	Justification from detailed assessment	Areas negatively affected
Group 2: Nationally significant negative impacts, with threshold met based on evidence for current and/or potential negative impacts. There are many feasible actions that would improve management and high benefits from national coordination.		
Arum lily (<i>Zantedeschia aethiopica</i>) is an invasive perennial herb that spreads through moist areas, forming dense infestations. It can be valued as an ornamental plant beneficial to the garden industry as a traded species. Engagement required to transition to alternatives and prevent sale/trade of this species. Negative impacts snapshot: <i>Economic (market):</i> Can reduce agricultural productivity by limiting grazing land. It may affect pasture quality. It is toxic to livestock, though is generally unpalatable. Control requires long-term investment. <i>Environmental:</i> May alter native vegetation structure and pose a threat to Australian biodiversity, and may disrupt key ecosystem processes, particularly in WA forests and wetlands. It forms monocultures that can displace understorey species and alters habitat for native fauna. It can clog waterways, impede water flow and alter hydrological dynamics. Fire regimes and successional processes may also be affected. A national strategic plan for Arum lily would focus on preventing further spread (avoiding costs) and support actions to improve management, building from WA learnings to reduce negative impacts across all domains (agricultural, environment, cultural and social). This would be done through identified feasible actions listed in Appendix B, including: development of improved control techniques; mapping; sharing best practice; coordinated research; policy alignment; surveillance; increasing partnerships across jurisdictions, sectors and land tenures to increase capacity to effectively manage this weed. Arum lily is a declared weed in WA and SA. Local eradication efforts exist in WA. Localised control and eradication efforts are ongoing in TAS. This weed is an emerging/increasing issue in TAS, VIC and NSW.	- Negative impacts: - Current high negative impact at a regional to multi-regional (or medium impact at multi-regional to national) level for environment^{4,5}. - Potential high negative impact at a multi-regional (or medium impact at national) level for economic (market)¹ and environment^{3,4,5}. - Scored 7th on total current negative impact and 11th on total potential negative impact (summed across all domains). - Many feasible actions that would improve management and high benefits from national coordination.	Jurisdictions: QLD, NSW, ACT, VIC, TAS, SA and WA, with potential to become more widely distributed in these states and territories. Ecosystems and land uses: Forests and wetlands. Pasture/Grazing. Climates (preferred): Subtropical / temperate.
Giant rat's tail grass (<i>Sporobolus pyramidalis</i>)* is an invasive tussock grass that is generally unpalatable. Negative impacts snapshot: <i>Economic (market):</i> Reduces pasture productivity and increases management costs. Pasture yields can be reduced significantly, and which can affect weight gain, fertility, meat grade, carcass condition, milk and weaning rates of livestock. Labour requirements to manage can be high. Emerging resistance to herbicides complicates control. May reduce the quality of agricultural products and may pose a risk to market access. May also contaminate other agricultural products and impact market certification. <i>Environmental:</i> May alter vegetation structure and may form dense monocultures. It poses a threat to rangeland biodiversity and has been recorded invading EPBC Act-listed Coastal Floodplain Eucalypt Forest of eastern Australia. It may alter nutrient cycling, while reduced groundcover may increase erosion risk. Dense tussocks can elevate fuel loads, intensify fire regimes and reinforce fire–weed feedback loops. <i>Social:</i> Physical impacts may arise from smoke inhalation, fire injuries, allergen exposure and chemical use in control. Mental health may be impacted, with stress, anxiety, financial strain, and loss of cultural connection reported. May reduce social amenity.	- Negative impacts: - Current high negative impact at a regional to multi-regional (or medium at a multi-regional to national) level for economic (market)^{1,2} and social⁶. - Potential high negative impact at a regional to multi-regional (or medium at multi-regional to national) level for economic (market)², environment^{4,5}, social^{6,7} and cultural^{8,9}. Potential high negative impact at a multi-regional to national level for economic (market)¹, environment³ and culture¹⁰.	Jurisdictions: QLD, NSW and NT, with potential to become more widely distributed into these states and territories, as well as potential to establish in WA and SA. Ecosystems and land uses: Grasslands, woodlands,

Species summary (drawn from assessment results, additional information provided by NEWP SG and WWG, and information sourced from literature)	Justification from detailed assessment	Areas negatively affected
<i>Cultural</i>: Infestations in native grasslands and woodlands may exacerbate challenges for First Nations people maintaining cultural practices, sustenance, and connection to Country. Dense infestation can restrict access to sacred and ceremonial sites, displace culturally significant plants and animals, and disrupt traditional fire management practices. It can reduce the availability of bush foods, medicinal plants, and materials for traditional crafts by displacing native species and altering habitat. A national strategic plan for Giant rat's tail grass (and the other <i>Sporobolus</i> spp. in this nomination (<i>S. africanus</i>, <i>S. fertilis</i>, <i>S. jacquemontii</i>, and <i>S. natalensis</i>)) would focus on preventing further spread and supporting actions to improve management across all domains (agricultural, environment, cultural and social) through identified feasible actions listed in Appendix B, including best practice guidelines and strategic planning; coordinated management research; policy alignment; surveillance; increasing partnerships across jurisdictions, sectors and land tenures to increase capacity to effectively manage this weed. For implementation, there may be efficiencies in coordinating with African lovegrass given their similar morphology, impact mechanisms, and some overlapping distribution. The plan would support QLD, NSW and NT in their ongoing management to reduce negative impacts to environment, agricultural productivity and First Nations people. Giant rat's tail grass is declared in QLD and WA. In QLD and NSW, Giant rat's tail grass is established and is primarily managed at the regional level.	– Scored 5th on total current negative impact and 6th on total potential negative impact (summed across all domains). – Scored 5th highest for difference in current to potential negative impact, suggesting its negative impacts could become much worse. • Many feasible actions that would improve management and high benefits in nationally coordinated action.	wetlands, Eucalypt forest, conservation reserves. Pasture/Grazing. Climates (preferred): Tropical / subtropical / warm temperate.
Sea spurge (<i>Euphorbia paralias</i>) is an invasive perennial herb, establishing in relatively undisturbed vegetation and forming dense monocultures. Negative impacts snapshot: <i>Environmental</i>: Has negative impacts within coastal dune systems and high-water mark zones. It can outcompete native understory species. Negative impacts to nesting sites for shorebirds like the EPBC Act listed Hooded plover (<i>Thinornis cucullatus</i>). Sea spurge can alter geomorphic processes on coastlines. A national strategic plan for Sea spurge would prevent further spread and support actions to improve management for the environment through identified feasible actions listed in Appendix B, including biological control; supporting research into integrated weed management; enhancing surveillance and mapping; strategic planning; sharing best practice; and asset protection. There is an opportunity to significantly improve management through biocontrol and to harness and support community commitment to management. It would strengthen efficiencies to coordinate all actions across jurisdictions via a national plan. The plan would support NSW, VIC, TAS, SA and WA in their ongoing management to reduce negative impacts to environmental assets. Sea spurge is managed under biosecurity legislation in NSW and VIC, and landholders have a general duty to control it in these jurisdictions. Local eradication efforts led by community groups and local councils are active, particularly in VIC, TAS and NSW. Current community-led containment projects occur in NSW, VIC, TAS, WA, SA	• Negative impacts: – Met the nationally significant negative impacts threshold with nationally significant negative environmental impacts based on additional evidence from the NEWP SG/WWG that supplemented the expert elicitation results. This included evidence that the species impacts EPBC Act listed species in multiple regions. • Many feasible actions that would improve management and high benefits in nationally coordinated action.	Jurisdictions: NSW, TAS, VIC, SA and WA. Broad climatic suitability modelling shows it has a potential to spread further in the coastal zone through these jurisdictions. Ecosystems and land uses: Coastal (beaches and dunes). Climates (preferred): Subtropical, Mediterranean.

Species summary (drawn from assessment results, additional information provided by NEWP SG and WWG, and information sourced from literature)	Justification from detailed assessment	Areas negatively affected
Spanish heath (<i>Erica lusitanica</i>)* is an invasive perennial shrub. Although widespread, it is yet to reach its full potential distribution. Infestations in some of the existing range are currently at very low density, so there is potential for expansion in these areas. Negative impacts snapshot: <i>Environmental:</i> Can invade and outcompete disturbed habitat, and may also establish in intact native vegetation, negatively impacting biodiversity. Threatens important habitats such as the Greater Blue Mountains World Heritage Area, including its 100 threatened plant species and the critically endangered Wollemi pine (<i>Wollemia nobilis</i>). In TAS, it has the potential to invade and expand in the Tasmanian Wilderness World Heritage Areas and adjacent areas. A national strategic plan for Spanish heath (and other <i>Erica</i> spp. in this nomination (<i>E. arborea</i>, <i>E. baccans</i> and <i>E. scoparia</i>)) would focus on preventing further spread and impact of Spanish heath and improving on-ground management through identified feasible actions listed in Appendix B, including improved surveillance and monitoring; aligning policy; training to improve capacity to manage; awareness raising; strategic planning and development of new management tools. For implementation, there may be efficiencies in coordinating with Ox-eye daisy due to overlaps in distribution and stakeholders managing these weeds. Spanish heath is declared and prohibited to trade in TAS and WA only. Localised management, containment and eradication programs are ongoing in TAS - in some areas, local eradication is the management objective under legislation. Managed at the regional level in parts of NSW. Managed in ACT.	- Negative impacts: - Met the nationally significant negative impacts threshold with nationally significant negative environmental impacts, based on additional evidence from the NEWP SG/WWG that supplemented the expert elicitation results. This included evidence that the species has the potential to impact EPBC Act listed and World Heritage areas in multiple regions. - Many feasible actions that would improve management and high benefits from national coordination.	Jurisdictions: ACT, NSW, SA, TAS, VIC and WA, with potential to spread further through these jurisdictions. Ecosystems and land uses: Heathlands, grassy woodlands, moist forest and riparian areas dry & wet sclerophyll forest, riparian vegetation, coastal, roadsides. Pasture/Grazing, Farmland. Climates (preferred): Mediterranean.
Group 3: Nationally significant negative impacts, with threshold met based on evidence for current and/or potential negative impacts. There are many feasible actions that would improve management and medium benefits from national coordination.		
Calotrope (Rubber bush) (<i>Calotropis procera</i>) is an invasive shrub or small tree. Calotrope (Rubber bush) may sometimes be consumed by cattle in dry years when other food sources are scarce, however it is not managed in any land use for this purpose. Negative impacts snapshot: <i>Economic (market):</i> Invades both grazed and ungrazed pastures, reducing rangeland productivity, hindering mustering, and limiting access to grazing and water. Control is costly. <i>Environmental:</i> Forms dense thickets in degraded areas, drainage lines, and floodplains, which may alter vegetation structure and reduce ground cover diversity. This may affect hydrology, soil properties, and nutrient cycling. Its allelopathic effects could inhibit native plant regeneration after disturbance. A national strategic plan for Calotrope (Rubber bush) would focus on preventing further spread and reducing current negative impacts on affected agricultural land, parks and reserves, and Indigenous lands, through identified feasible actions listed in Appendix B, including harmonised policy; development of new management	- Negative impacts: - Current high negative impacts at a regional to multi-regional (or medium at a multi-regional to national) level for economic (market)¹ and environment³. - Potential high negative impacts at a regional to multi-regional (or medium at a multi-regional to national) level for economic (market)¹ and environment^{3,4}. - Scored 12th highest on total current negative impact (all domains).	Jurisdictions: NT, QLD, WA (only limited Atlas of Living Australia records in SA) and potential to establish in NSW. Ecosystems and land uses: Rangeland, roadsides, river flats, coastal dunes,

Species summary (drawn from assessment results, additional information provided by NEWP SG and WWG, and information sourced from literature)	Justification from detailed assessment	Areas negatively affected
tools (opportunity to significantly improve management through biocontrol); awareness raising; and asset protection. Calotrope (Rubber bush) is declared in NT and WA. Some legislation is in place for containment and movement control. Some local eradication programs are in place.	Many feasible actions that would improve management and medium benefits from national coordination	plains, ephemeral watercourses. Pasture/Grazing. Climates (preferred): Semi-arid, arid, drier habitats in tropical / subtropical.
Harrisia (<i>Harrisia martinii</i>)* is an invasive, spiny cactus that can form impenetrable thickets. It was introduced as an ornamental plant and for edible fruit but is no longer (or not widely) valued for these traits. Negative impacts snapshot: Economic (market): Significantly affects the grazing industry by forming dense thickets that reduce pasture productivity and obstruct livestock movement. Its sharp spines can cause injuries to stock and working dogs. These injuries can lead to abscesses, downgrading meat, wool, and hides. Control is costly, including due to moderate herbicide resistance. Environmental: Infestations can cover 80–90% of ground and climb into vegetation, creating monocultures that displace native species and may disrupt ecosystem structure. It threatens biodiversity, including Brigalow woodlands in QLD, and provides shelter for feral animals. Its sharp spines can injure or kill native fauna and create physical barriers to movement. Dense mats may impede water flow in waterways. Social: Sharp spines pose health risks to graziers and workers, with cases requiring hospitalisation. Spread into conservation areas reduces public amenity and recreational value. Mental health impacts as a result of stock injury/death and subsequent financial impact are possible. Cultural: While direct cultural impacts are undocumented, by analogy with other invasive cacti, its dense thickets and associated loss of native flora and fauna may disrupt cultural landscapes, including totem species. Its invasion of grasslands and acacia woodlands may reduce the availability of traditional foods, medicines, water, and craft resources. Dense thickets may restrict access to significant sites, like Brigalow Country. A national strategic plan for <i>Harrisia</i> (and the other <i>Harrisia</i> spp. in this nomination (<i>H. pomanensis</i> (syn. <i>H. regelii</i>) and <i>H. tortuosa</i>)) would focus on preventing further spread and reducing current negative impacts on affected agricultural land, through identified feasible actions listed in Appendix B, including harmonised legislation; development of new management tools; awareness raising; and asset protection. Actions are predominately required in NSW and QLD. Further investment would be economical in resourcing additional activities as well as education and capacity building would strengthen efforts at minimum cost (economical) to bolster NSW and QLD efforts. Also identified potential benefit in extending existing Cacti WoNS for efficiencies that would support further action on these cacti species. <i>Harrisia</i> is declared in QLD, NSW and WA. In QLD and	- Negative impacts: - Current high negative impacts at a regional to multi-regional (or medium at a multi-regional to national) level for economic (market)¹, environment^{3,4} and social^{6,7}. - Potential high negative impact at a regional to multi-regional (or medium at multi-regional to national) level for economic (market)¹, environment^{3,4,5}, social^{6,7} and culture⁸. - Scored 3rd highest on total current negative impact and 10th highest on total potential negative impact (summed across all domains). - Has many feasible actions that would improve management and medium benefits from national coordination. - Prioritised lower under benefits from national coordination as it is impacting fewer jurisdictions compared to other species and there are already several resourced actions in place.	Jurisdictions: NSW, NT and QLD, with potential to establish in SA. Ecosystems and land uses: Grasslands, woodlands, Brigalow & pine forest, semi-arid shrublands. Pasture/Grazing. Climates (preferred): Semi-arid.

Species summary (drawn from assessment results, additional information provided by NEWP SG and WWG, and information sourced from literature)	Justification from detailed assessment	Areas negatively affected
NSW, <i>Harrisia</i> is established and is primarily managed at the regional level. WA aim to prevent the establishment of <i>Harrisia</i> .		
Neem tree (<i>Azadirachta indica</i>) is an invasive tree that is rapidly invading river systems in northern Australia. This species has some identified benefits with commercial interests as plantations and medicinal benefits. Engagement is required with communities across WA, NT and QLD as some trees are valued by communities as shade trees. Negative impacts snapshot: • <i>Economic (market)</i>: Due to its competitive nature, as well as being allelopathic, Neem tree may inhibit growth and outcompete desired plants such as pasture and crops. Control of Neem is labour-intensive and costly, particularly in coastal and peri-urban areas. • <i>Environmental</i>: Neem may displace native canopy trees and form dense thickets, particularly along waterways, suppressing native flora and altering ecosystem structure. It can impact biodiversity in riparian zones and woodlands by reducing native plant diversity and competing aggressively with native species. Its insecticidal compounds (Azadirachtin) can leach into waterways, affecting freshwater species (fish and tadpoles), while impacts on native insects may disrupt food chains. These effects are pronounced in sensitive ecosystems such as the Dampier Peninsula Monsoon vine thickets. Neem may also alter ecosystem functions through high water use and leaf litter that affects soil pH and nutrient cycling. • <i>Cultural</i>: May threaten First Nations cultural sites and practices by restricting access and displacing culturally significant plants. Can impact ceremonial grounds and traditional food sources, though some communities value its shade and waterhole protection. A national strategic plan for Neem tree would focus on preventing further spread (through removal of existing large trees) and improving management through identified feasible actions listed in Appendix B, including aligned policy; surveillance; new management tools; training; awareness raising; and asset protection. There is an opportunity to address the issue with targeted resources on specific actions before negative impacts and costs further increase. Neem tree is declared in NT. In WA, NT and QLD, Neem tree is established and is primarily managed at the regional and local level. Regional councils and environmental agencies in affected areas, such as QLD's Gulf region, have implemented localised strategies to prevent the spread of Neem tree along rivers and watercourses.	• Negative impacts: – In the top 6 species for nationally significant negative impacts; assessed as having potential high negative impact at national level for environment⁵ by majority of experts. – Current high negative impact at a regional to multi-regional (or medium impact at multi-regional to national) level for economic (market)¹ and high negative impact at multiregional level for environment^{3,4,5}. – Potential high negative impact at a multiregional-national level for economic (market)¹, environment^{3,4} and culture⁸. – Scored 2nd highest on total current negative impact and 5th highest on total potential negative impact (summed across all domains). • Many feasible actions that would improve management and medium benefits from national coordination. • Prioritised lower under benefits from national coordination as, while there are identified feasible options, there is recognition that it is difficult and costly to remove large trees.	Jurisdictions: NT, QLD and WA. Broad climatic suitability modelling shows it has a potential to establish in NSW. Ecosystems and land uses: Riparian, woodlands. Crops / pasture / grazing. Climates (preferred): Tropical / subtropical.
Tropical soda apple (<i>Solanum viarum</i>) is an invasive, thorny shrub. Despite intensive containment efforts, it is spreading from the current infested area in NSW because it is readily eaten by livestock, native and invasive animals and subsequently moved between properties. After being detected in Florida in 1987, it spread over an estimated 503,000 hectares. Negative impacts snapshot:	• Negative impacts: – In the top 6 species for nationally significant negative impacts; assessed as having potential high negative impact at national level for economic (market)¹,	Jurisdictions: NSW and QLD with potential to establish in VIC.

Species summary (drawn from assessment results, additional information provided by NEWP SG and WWG, and information sourced from literature)	Justification from detailed assessment	Areas negatively affected
Economic (market): Reduces pasture productivity and carrying capacity where it occurs in northern NSW. Its sharp prickles can injure livestock and restrict access to shade and water, while unpalatable leaves further reduce grazing value. It can replace one hectare of pasture in 6 months from just a few plants. This weed hosts numerous crop pests and diseases. Management is costly, labour-intensive and requires strict hygiene. Environmental: Forms dense thickets in open areas, bushland, and riparian zones. It may displace native plants and disrupt ecological processes. It spreads rapidly via floods and thrives in disturbed sites, with bushfire potentially stimulating germination. Dense infestations may impede wildlife movement. Social: May pose risks to human health through toxic fruit and sharp prickles, which restrict access to land and water. Control costs and complexity may create financial and emotional strain for landholders, contributing to stress and reduced well-being. Infestations may diminish recreational amenity and aesthetic value. A national strategic plan for Tropical soda apple would focus on preventing further spread and improving management through identified feasible actions listed in Appendix B, including policy harmonisation; strengthening containment and movement controls; and raising awareness. Further investment would be economical in resourcing additional activities as well as education, and capacity building would strengthen efforts at minimum cost to bolster NSW and QLD efforts. Tropical soda apple is declared in QLD, NSW and WA. In QLD and NSW, all known infestations of Tropical soda apple are heavily managed by government. There is a strategic plan in place in NSW and regional response plan in the NSW North Coast Local Land Services region	environment^{3,4,5}, social^{6,7} and culture^{8,9,10} by majority of experts. - Current medium to high negative impact at a regional to multi-regional level for economic (market)¹, environment^{3,4,5} and social⁶. - Scored 2nd highest on total potential negative impact (summed across all domains). - Scored highest for difference in current to potential negative impact, suggesting its negative impacts could become much worse. - Many feasible actions that would improve management and medium benefits from national coordination - Prioritised lower under benefits from national coordination as it currently only occurs in NSW and QLD and is under control order in both states, with many actions underway	Ecosystems and land uses: Riparian, roadsides. Crops / pasture / grazing. Climates (preferred): Tropical / subtropical.
Group 4: Nationally significant negative impacts, with threshold met based on evidence for current and/or potential negative impacts, with relative lower negative impacts than above species. There are many feasible actions that would improve management and medium benefits from national coordination.		
Wilding olive (<i>Olea europaea</i>) is an invasive shrub or tree. This includes both escaped (unmanaged/feral/wilding) European olive and African olive. It excludes cultivated olive groves that are maintained and harvested. Olive is a beneficial species to the commercial olive industry and backyard olive industry growers. Estimates of the economic (market) value of the Australian olive industry is over \$210 million. Olive is grown on agricultural land and in urban and peri urban gardens in areas with suitable climate. People grow olives personally for food and cultural reasons. Further engagement with all stakeholders would be the first step to gain a shared understanding of the Wilding olive problem and collaborate to refine and develop actions to improve management. Negative impacts snapshot: Environmental: Can form dense canopies that may suppress native plants, reduce species richness by up to 50%, and threaten endangered species. May alter fire regimes, nutrient cycling and soil moisture. In NSW, Invasion of Native Plant Communities by African Olive (<i>Olea europaea</i> subsp. <i>cuspidata</i>) has been listed as a Key Threatening Process under the NSW Threatened Species Conservation Act 1995. In SA, Wilding olive	- Negative impacts: - Current high negative impact at a regional to multi-regional (or medium impact at multi-regional to national level) for environment^{3,4,5}. - Potential high negative impact at a multi-regional to national level for environment^{3,4,5}. - Scored 16th highest on total current negative impact (summed across all domains) and 15th highest on total	Jurisdictions: ACT, NSW, QLD, SA, VIC and WA, with broad climatic suitability modelling indicating it has the potential to establish in TAS. Ecosystems and land uses:

Species summary (drawn from assessment results, additional information provided by NEWP SG and WWG, and information sourced from literature)	Justification from detailed assessment	Areas negatively affected
impacts state threatened species, the Cryptic sun-moth (<i>Synemon theresal</i>), and EPBC Act listed species including but not limited to Cunningham's skink (<i>Egernia cunninghami</i>) and the Flinders Ranges worm-lizard (<i>Aprasia pseudopulchella</i>). A national strategic plan would focus on preventing further spread of Wilding olives and reduce current negative impacts of Wilding olives on affected environmental assets and industries, through identified feasible actions listed in Appendix B including development of new management tools, awareness raising and asset protection. Wilding olive (both wilding European olive and African olive) is a declared weed in SA (i.e., regulation of olives not planted, used, maintained for domestic, public amenity or commercial purposes). African olive is managed at the regional level in NSW and at the local level in ACT.	potential negative impact (summed across all domains). - Many feasible actions that would improve management and medium benefits from national coordination. - Prioritised lower than groups above due to relative lower negative impacts. However, it is an important priority with opportunity to avoid or reduce future threat through active management and reduce the current negative environmental impacts.	Woodlands, coastal, riparian, offshore islands. Pasture / Grazing / Horticulture. Climates (preferred): Mediterranean.
Ox-eye daisy (<i>Leucanthemum vulgare</i>) is an invasive perennial herb impacting temperate areas. There is concern that expansion of this weed in Australia may shift from invasion of mainly environmental areas to pastures and other agricultural enterprises, as has been witnessed in the USA and Canada. Negative impacts snapshot: Environmental: Forms monocultures in grasslands, woodlands, riparian areas and roadsides, which may displace native ground cover and limit canopy recruitment. Reduces plant diversity in national heritage areas like Kosciuszko National Park. In NSW, Ox-eye daisy is recognised as a key threat to the Max Mueller's burr-daisy (<i>Calotis pubescens</i>), listed as endangered, and to the Mauve burr-daisy (<i>C. glandulosa</i>) listed as vulnerable. In NSW, Ox-eye daisy is also recognised as a threat to New England Peppermint Woodland Endangered Ecological Community, Metcalfe's greenhood (<i>Pterostylis metcalfei</i>), and Fragrant pepperbush (<i>Tasmannia glaucifolia</i>). May increase soil erosion after seasonal dieback. A national strategic plan would focus on preventing further spread, particularly preventing spread from roadside infestations into production, and conservation land and improving control tools and efficacy to reduce negative impacts on important environmental assets. Identified feasible actions are listed in Appendix B. For implementation, there may be efficiencies in coordinating with Spanish heath (due to overlaps in distribution and stakeholders managing these weeds). There is an opportunity to improve management to protect World Heritage Areas. Ox-eye daisy is declared in VIC, SA and WA. In NSW and VIC, Ox-eye daisy is managed at the regional level and is a regional eradication target in some areas. Managed at the local level in ACT.	- Negative impacts: - Current medium impacts at a regional level for environment^{3,4,5}. - Potential medium impact at a regional to multi-regional level for environment^{3,4,5}. - Many feasible actions that would improve management and medium benefits from national coordination. - Prioritised lower than groups above due to relative lower negative impacts (most serious impacts in NSW) and already declared in NSW and VIC who are working together to manage in the alpine region. However, remains a priority with opportunity to improve management to protect World Heritage Areas.	Jurisdictions: ACT, NSW, SA, VIC and TAS, with potential to establish in WA and QLD. Ecosystems and land uses: Lowland grassland and grassy woodlands, damp sclerophyll forests, riparian vegetation, alpine and sub-alpine vegetation, roadsides. Pasture / grazing. Climates (preferred): Cool temperate
Wandering trad (<i>Tradescantia fluminensis</i>) is an invasive herb that particularly impacts moist forests. The variegated form of the species can be valued as an ornamental plant and beneficial to industry as a traded species. Engagement required to transition to alternative species.	- Negative impacts: - Current high negative impact at a regional to multi-regional (or medium impact at	Jurisdictions: ACT, NSW, QLD, SA, TAS, VIC & WA and

Species summary (drawn from assessment results, additional information provided by NEWP SG and WWG, and information sourced from literature)	Justification from detailed assessment	Areas negatively affected
Negative impacts snapshot: <i>Environmental:</i> It forms dense mats that suppress native plant germination and may reduce plant richness, with up to 80% decline in heavily infested areas. It threatens multiple endangered ecological communities and alters ecosystem processes like nutrient cycling and soil moisture. Recommended action to (1) improve control of weeds impacting riparian/closed forests and (2) Wandering trad biocontrol project identified. Identified feasible actions are listed in Appendix B. This species would not require a national plan, but rather would be managed as two discrete actions, providing an efficient option to deliver improved management. Wandering trad is not declared in any state or territory. It is managed at local levels where it is established, with no formal containment zones or eradication programs. Control efforts are site-based and led by councils, Landcare, and NRM groups, but are not coordinated or scaled.	multi-regional to national) level for environment³. – Current high negative impact at a multi-regional to national level for environment⁴. – Potential high negative impact at a multi-regional (or medium impact at national) level for environment^{3,5} and high negative impact at a multi-regional to national level for environment⁴. – Scored 14th highest for current negative impact (summed across all domains). • Many feasible actions that would improve management and medium benefits from national coordination. • Prioritised lower than groups above due to relative lower negative impacts	has potential to spread further through these jurisdictions. Ecosystems and land uses: Subtropical rainforests, riparian, coastal plains. Pasture / grazing. Climates (preferred): Temperate / subtropical / tropical.

Results for current and potential negative impact (justification from detailed assessment – column B) presented in the table are by domain (economic (market), environment, social, cultural), where numbers indicate the question (page 17-19) where it has been assessed at the magnitude and scale indicated (e.g. high impact at national level). Numbers and questions are as follows:

¹ Impacts on yields and management inputs

² Impacts on quality of products

³ Impacts on vegetation structure

⁴ Impacts on Australian biodiversity

⁵ Modification of ecosystem functions

⁶ Impacts on human health

⁷ Impacts on social amenity

⁸ Impacts on oral tradition, practice, ritual and knowledge

⁹ Impacts on subsistence, sustenance and craftsmanship resources

¹⁰ Impacts on heritage (place based)

Table 4 The 14 nominations that did not meet national significance criteria, showing results for each detailed assessment component and reason where criteria were not adequately met

Criteria threshold met				
Species	Nationally significant negative impacts (current/potential)	Feasibility of management	Benefits from national coordination	Summary and general reason why criteria were not met (where relevant)
Note: Detailed assessment results are summarised at Appendix C and provide more detail on how the species performed against the assessment criteria. The feasibility of management component considered if the identified feasible actions would potentially benefit from national coordination. This was then further considered under the benefits from national coordination component, which specifically considered whether a national strategic plan or approach is required (necessary) to improve management.				
Blue periwinkle (<i>Vinca major</i>)	Not met	Not met	Not met	Nationally significant negative impacts: Not met. Based on the current and potential negative impact results, the NEWP SG/WWG agreed that the threshold for nationally significant impacts was not met. Feasibility of management: Not met. There are some identified feasible actions that are socially acceptable, however most actions are localised. National coordination could help but may not be essential. Management is generally effective at the site scale when integrated into restoration planning. There are not likely to be strong benefits to national coordination of management solutions. Benefits from national coordination: Not met. While there may be some efficiencies to coordinated action, a national strategic plan or approach was not considered essential with actions that could be coordinated and implemented at lower scales (e.g. local, regional and state). Not a strong case for a standalone national strategic plan/approach. Potentially this species could be part of a future project to develop guidelines for restoring closed forest/riparian ecosystems, along with Wandering trad, Broad-leaf privet, Camphor laurel, Mickey Mouse plant and other low light-tolerance weeds. The focus would be on reducing invasion risk and enhancing ecosystem recovery and resilience following invasion.

NEWP assessment report

Criteria threshold met				
Species	Nationally significant negative impacts (current/potential)	Feasibility of management	Benefits from national coordination	Summary and general reason why criteria were not met (where relevant)
				Note: Detailed assessment results are summarised at Appendix C and provide more detail on how the species performed against the assessment criteria. The feasibility of management component considered if the identified feasible actions would potentially benefit from national coordination. This was then further considered under the benefits from national coordination component, which specifically considered whether a national strategic plan or approach is required (necessary) to improve management.
Broad-leaf privet (<i>Ligustrum lucidum</i>)*	Yes	Not met	Not met	Nationally significant negative impacts: Yes. Based on the current and potential negative impact results, the NEWP SG/WWG agreed that the threshold for nationally significant impacts was met. Feasibility of management: Not met. There are some identified feasible actions that are socially acceptable, however the need for national coordination is unclear. National coordination of these actions could help but is not essential, as actions could be effectively implemented at state or regional levels. Benefits from national coordination: Not met. A national strategic plan or approach was not considered essential as actions could be coordinated and implemented at lower scales (e.g. local, regional and state). Not a strong case for a standalone national strategic plan/approach. Potentially this species could be part of a future project to develop guidelines for restoring closed forest/riparian ecosystems.
Camphor laurel (<i>Cinnamomum camphora</i>)	Yes	Yes	Not met	Nationally significant negative impacts: Yes. Based on the current and potential negative impact results, the NEWP SG/WWG agreed that the threshold for nationally significant impacts was met. Feasibility of management: Yes. There are feasible management actions that are socially acceptable and would benefit from national coordination. Benefits from national coordination: Not met. While some considerations for this criterion were met, a national strategic plan or approach was not strictly needed because most actions could be coordinated and implemented at lower scales, particularly across NSW and QLD who are most impacted. I.e. while there may be a benefit from national coordination, national coordination was not considered essential (i.e. not a strong case). Potentially this species could be part of a future project to develop guidelines for restoring closed forest/riparian ecosystems, and/or part of a future project to progress a nationally consistent ban on sale.

NEWP assessment report

Criteria threshold met				
Species	Nationally significant negative impacts (current/potential)	Feasibility of management	Benefits from national coordination	Summary and general reason why criteria were not met (where relevant)
				Note: Detailed assessment results are summarised at Appendix C and provide more detail on how the species performed against the assessment criteria. The feasibility of management component considered if the identified feasible actions would potentially benefit from national coordination. This was then further considered under the benefits from national coordination component, which specifically considered whether a national strategic plan or approach is required (necessary) to improve management.
Coast beach daisy (<i>Arctotheca populifolia</i>)	Yes	Yes	Not met	Nationally significant negative impacts: Yes. Based on the current and potential negative impact results, and additional evidence the NEWP SG/WWG agreed that the threshold for nationally significant impacts was met. Feasibility of management: Yes. There are feasible management actions that are socially acceptable and would benefit from national coordination. Benefits from national coordination: Not met. It was determined that this species did not present a strong enough case for a national strategic plan or approach as a standalone species. As a dune weed, it was recommended that consideration is given to integrating action with sea spurge given similar impacts and management needs that would help to protect coastal habitat and nationally important shore birds.
Common mother-of-millions (<i>Bryophyllum delagoense</i>)	Not met	Yes	Not met	Nationally significant negative impacts: Not met. In reviewing current and potential negative impact results, the NEWP SG/WWG considered that the impacts of this species were comparatively lower than other species and impacts have not materially increased over the last decade, noting earlier consideration as a WoNS. It was agreed that this species did not meet the threshold for nationally significant impacts, considering there was not strong evidence for nationally significant impacts. Feasibility of management: Yes. There are feasible management actions that are socially acceptable and would benefit from national coordination. Benefits from national coordination: Not met. A national strategic plan or approach was not considered essential because actions could be coordinated and implemented at lower scales (e.g. local, regional and state) and some actions are already underway. Local control or containment programs are carried out at a regional level in NSW and QLD. Not considered to present a strong case for a national strategic plan.

NEWP assessment report

Criteria threshold met				
Species	Nationally significant negative impacts (current/potential)	Feasibility of management	Benefits from national coordination	Summary and general reason why criteria were not met (where relevant)
				Note: Detailed assessment results are summarised at Appendix C and provide more detail on how the species performed against the assessment criteria. The feasibility of management component considered if the identified feasible actions would potentially benefit from national coordination. This was then further considered under the benefits from national coordination component, which specifically considered whether a national strategic plan or approach is required (necessary) to improve management.
Fountain grass (<i>Cenchrus setaceus</i>)	Not met	Yes	Not met	Nationally significant negative impacts: Not met. Based on the current and potential negative impact results, the NEWP SG/WWG agreed that the threshold for nationally significant impacts was not met. Feasibility of management: Yes. There are feasible management actions that are socially acceptable and would benefit from national coordination. Benefits from national coordination: Not met. A national strategic plan or approach was not considered necessary because actions could be coordinated and implemented at lower scales (e.g. local, regional and state) and many actions already in place. Not a strong case for national coordination.
Geraldton carnation weed (<i>Euphorbia terracina</i>)	Not met	Yes	Not met	Nationally significant negative impacts: Not met. Based on the current and potential negative impact results, the NEWP SG/WWG agreed that the threshold for nationally significant impacts was not met. Feasibility of management: Yes. There are feasible management actions that are socially acceptable and would benefit from national coordination. Benefits from national coordination: Not met. A national strategic plan or approach would assist but is not considered necessary for improved management to progress. There was not a strong case for a national strategic plan or approach.
Glory lily (<i>Gloriosa superba</i>)	Not met	Not met	Not met	Nationally significant negative impacts: Not met. Based on the current and potential negative impact results the NEWP SG/WWG agreed that the threshold for nationally significant impacts was not met. Feasibility of management: Not met. There are some feasible potential management actions that are socially acceptable. However, there are limited benefits to undertaking these actions in a nationally coordinated approach as most actions are localised and implemented through site-specific or regional/state plans. Benefits from national coordination: Not met. It was determined that this species did not present a strong enough case for a national strategic plan or approach as a standalone species. As a dune weed, it was recommended that consideration is given to integrating action with sea spurge to support integrated action across Australia's coastal systems.

NEWP assessment report

Criteria threshold met				
Species	Nationally significant negative impacts (current/potential)	Feasibility of management	Benefits from national coordination	Summary and general reason why criteria were not met (where relevant)
				Note: Detailed assessment results are summarised at Appendix C and provide more detail on how the species performed against the assessment criteria. The feasibility of management component considered if the identified feasible actions would potentially benefit from national coordination. This was then further considered under the benefits from national coordination component, which specifically considered whether a national strategic plan or approach is required (necessary) to improve management.
Italian buckthorn (<i>Rhamnus alternatus</i>)	Not met	Yes	Not met	Nationally significant negative impacts: Not met. Based on the current and potential negative impact results, the NEWP SG/WWG agreed that the threshold for nationally significant impacts was not met. Feasibility of management: Yes. There are feasible management actions that are socially acceptable and would benefit from national coordination. Benefits from national coordination: Not met. A national strategic plan is not required as only one action (ban from sale) is requiring a coordinated approach. Considered lower priority. There could be a future project to progress a nationally consistent ban on sale and develop best practice guide to raise awareness and encourage early control.
Groundsel bush (<i>Baccharis halmifolia</i>)	Not met	Not met	Not met	Nationally significant negative impacts: Not met. Based on the current and potential negative impact results, the NEWP SG/WWG agreed that the threshold for nationally significant impacts was <u>not</u> met. Feasibility of management: Not met. There are feasible management actions that are socially acceptable. However, there are limited benefits to undertaking these actions in a nationally coordinated approach except for asset protection. Some infestations are already being intensively controlled at the site scale (either manually e.g. by Bushcare groups or with herbicides in some contexts) and these interventions are effective. Benefits from national coordination: Not met. A national strategic plan or approach was not considered essential because actions could be coordinated and implemented at lower scales (e.g. local and regional). Not a strong case for national coordination. Potentially this species could be part of a future project to develop guidelines for restoring closed forest/riparian ecosystems.

NEWP assessment report

Criteria threshold met				
Species	Nationally significant negative impacts (current/potential)	Feasibility of management	Benefits from national coordination	Summary and general reason why criteria were not met (where relevant)
				Note: Detailed assessment results are summarised at Appendix C and provide more detail on how the species performed against the assessment criteria. The feasibility of management component considered if the identified feasible actions would potentially benefit from national coordination. This was then further considered under the benefits from national coordination component, which specifically considered whether a national strategic plan or approach is required (necessary) to improve management.
Mickey mouse plant (<i>Ochna serrulata</i>)	Not met	Not met	Not met	Nationally significant negative impacts: Not met. Based on the current and potential negative impact results, the NEWP SG/WWG agreed that the threshold for nationally significant impacts was not met. Feasibility of management: Not met. There are feasible management actions that are socially acceptable. However, there are limited benefits to undertaking these actions in a nationally coordinated approach except for asset protection. Some infestations are already being intensively controlled at the site scale (either manually e.g. by Bushcare groups or with herbicides in some contexts) and these interventions are effective. Benefits from national coordination: Not met. A national strategic plan or approach was not considered essential because actions could be coordinated and implemented at lower scales (e.g. local and regional). Not a strong case for national coordination. Potentially this species could be part of a future project to develop guidelines for restoring closed forest/riparian ecosystems.
Onion weed (<i>Asphodelus fistulosus</i>)	Not met	Not met	Not met	Nationally significant negative impacts: Not met. Based on the current and potential negative impact results, the NEWP SG/WWG agreed that the threshold for nationally significant impacts was not met. Feasibility of management: Not met. There are feasible management actions that are socially acceptable. However, there are limited benefits to undertaking these actions in a nationally coordinated approach. There are few actions that require national coordination. Benefits from national coordination: Not met. A national strategic plan or approach is not needed because actions could be coordinated and implemented at lower scales. There are no strong benefits or need for national coordination.

NEWP assessment report

Criteria threshold met				
Species	Nationally significant negative impacts (current/potential)	Feasibility of management	Benefits from national coordination	Summary and general reason why criteria were not met (where relevant)
				Note: Detailed assessment results are summarised at Appendix C and provide more detail on how the species performed against the assessment criteria. The feasibility of management component considered if the identified feasible actions would potentially benefit from national coordination. This was then further considered under the benefits from national coordination component, which specifically considered whether a national strategic plan or approach is required (necessary) to improve management.
Sticky nightshade (<i>Solanum sisymbriifolium</i>)	Not met	Yes	Not met	Nationally significant negative impacts: Not met. In reviewing the current and potential negative impact results (including variation and lower confidence level of assessments), the NEWP SG/WWG considered that the impacts of this species were comparatively lower than other species. It was agreed that this species did not meet the threshold for nationally significant impacts, considering a number of factors including the limited current and potential distribution and insufficient evidence to support nationally significant impacts. Feasibility of management: Not met. There are feasible management actions that are socially acceptable, however national coordination is not essential as actions could be implemented at the state level. Benefits from national coordination: Not met. A national strategic plan or approach is not considered essential because actions could be coordinated and implemented in NSW and QLD at lower scales (e.g. regional and state) and some are already in place. Not a strong case for national coordination.
Willows cactus (<i>Cereus uruguayanus</i>)	Not met	Not met	Not met	Nationally significant negative impacts: Not met. Based on the current and potential negative impact results, the NEWP SG/WWG agreed that the threshold for nationally significant impacts was not met. Feasibility of management: Not met. There are feasible management actions that are socially acceptable. However, there are limited benefits to undertaking these actions in a nationally coordinated approach. There are few actions that require national coordination. Benefits from national coordination: Not met. A national strategic plan or approach is not needed because actions could be coordinated and implemented at lower scales (e.g. local, regional and state). There are no strong benefits or need for national coordination.

* Assessed as the lead species for a nominated group of closely-related weeds. All species are listed in [Appendix C](#) (search by lead species).

Co-investment and implementation

Following NBC agreeing on national established weed priorities, next steps are governments, industry and community organisations considering co-investing in new national established weed priorities to enable implementation of identified feasible management actions with stakeholders.

For each new national established weed priority, implementation of identified feasible actions is dependent on the level of co-investment secured; hence, a species being agreed as a new national established weed priority does not guarantee implementation of management actions.

An estimate of the investment required to implement nationally coordinated actions for the agreed national established weed priorities, and recommended delivery approaches, will be prepared by the project team.

Negotiations will be progressed with governments, industry and community organisations to co-contribute to implementation, in recognition of shared benefits across sectors.

Depending on investment in management actions, the NBC will be asked to consider the NEWP delivery stream to implement the management actions for each new national established weed priority. The three delivery streams under NEWP are:

- Weeds of National Significance (WoNS) – facilitates nationally coordinated action on priority established weed species.
- National Established Weeds Action List (NEWAL) – facilitates management of discrete national priority actions.
- Weed Issues of National Significance (WINS) – develops collective solutions to priority established weed issues.

The NEWP program design is flexible to support collaborative action with stakeholders on each national established weed priority, with or without assigning the WoNS label.

Once agreed, the scale of implementation will be published on the [Weeds Australia](#) NEWP webpage and communicated to stakeholders through various channels.

National coordinated action will include development of strategic plans. Each strategic plan will share common goals, but the objectives and strategic actions will be specific to the needs of individual priorities and will be developed by taskforces in consultation with broader stakeholder groups.

Any regulatory decisions on weed management for land managers are the responsibility of individual state and territory governments, outside of NEWP.

Appendix A: Detailed assessment process

There were three main elements to the detailed assessment process, which aligns with EPDNS criteria (NBC, 2016):

- 1) Nationally significant negative impacts – an assessment of a species' invasiveness (assessed by ABARES), current distribution, potential distribution under current climate and due to climate change (assessed by ABARES), and negative impacts (current and potential) (assessed by expert elicitation). Impact questions within the assessment were designed to align with the negative impact criteria listed within the EPDNS.
- 2) Feasibility of management – an assessment of the current management gaps for the species, the feasibility of potential management solutions (including social acceptability), and whether the species has any benefits (economic (market), environmental, social or cultural). It also considers whether there are benefits (or potential conflicts) from undertaking the proposed management solutions in a nationally coordinated manner. All aspects of this component are assessed by the WWG or their proxies.
- 3) Benefits from national coordination – a qualitative assessment to determine if there are sufficient benefits to taking a nationally coordinated approach to address the species. All aspects of the component are assessed by the WWG.

A species needed to pass all three elements to be determined as nationally significant and subsequently be considered as a national established weed priority.

Nationally significant negative impacts

Determining whether a weed has nationally significant impacts depended on how impactful it is or could be, how invasive it is, where it currently is, and where it could establish. Consequently, the detailed assessment of nationally significant negative impacts considered: invasiveness, potential distribution and current and potential negative impacts.

Invasiveness

ABARES assessed the invasive characteristics of each species. Assessments were reviewed by independent reviewers from state and territory governments, as well as the NEWP SG.

The invasiveness criterion sought to identify characteristics of a weed that enhance its invasiveness, such as its ability to colonise and establish, its growth and competitive ability, reproductive ability, and dispersal (human mediated and natural). An assessment of invasiveness was important to identify weeds that can spread faster and be more difficult to manage where they are present.

In assessing the invasiveness criteria for the 29 species, ABARES conducted a literature review and sought additional information from experts as required, in accordance with the agreed process. Information on invasiveness characteristics was provided by organisations in response to question 17 in their nomination form and was also considered in informing the invasiveness assessment.

All species were assessed to have invasive characteristics (see species summaries at [Appendix B](#) and [Appendix C](#) for further information). Species identified with the highest invasive characteristics included (in alphabetical order): African lovegrass, Amazon frogbit, Buffel grass, Calotrope (Rubber bush), Common mother-of-millions, Fountain grass, Giant rat's tail grass, Glory lily and Siam weed. These species have superior ability to colonise, establish, reproduce and persist. They possess many morpho-physiological traits for competitive success, and most have been described as transformer species that alter environmental regimes. They also produce a larger number of viable propagules annually and have multiple long distance dispersal mechanisms, both natural and human (intentional and accidental).

Potential distribution under current and future climate

ABARES assessed the potential distribution of each species under current and future climate. The maps were reviewed by the NEWP SG.

Mapping the current distribution of the weed was a prerequisite to modelling the potential distribution. Current distribution maps were developed for each weed using the Atlas of Living Australia data verified by the state and territory WWG members, with additional data provided by the jurisdictions where required.

Potential distribution (under current climate) was modelled to inform what percentage of the potential distribution is currently occupied by the species and therefore what its scope is for range expansion.

Potential distribution (under current climate) modelling was undertaken only to assess the broad climatic suitability for the species in Australia, based on temperature and rainfall requirements from Australian and global locations where the species is known to occur. These models did not consider species-specific factors such as land use, soil type and other habitat requirements, which may further constrain the species' distribution.

To be considered nationally significant, the species needed to have the potential to impact more than one state or territory. All 29 species were assessed to have the potential to impact more than one state or territory.

Potential distribution under future climate (due to climate change) was modelled under up-to-date climate change scenarios and compared with the species' potential distribution (under current climate) to inform if the predicted range would contract, expand, or remain the same due to climate change.

Climate change modelling was undertaken using seven future global climate models (GCMs) but due to the considerable limitations with the modelling and uncertainty, the NEWP SG and WWG did not use the results of climate change modelling to inform their decision making.

Negative impacts

A panel of 33 experts (guided by ABARES) assessed the current and potential economic (market), environmental, social and cultural negative impacts of a species. The panel included representation of assessors with a diversity in expert backgrounds including scientists (e.g. ecologists, agronomists, botanists, social scientists) and weed control practitioners (e.g. farmers, park managers, advisors)

across relevant stakeholder groups (agriculture, mining, conservation, research, government, Indigenous land management).

The current and potential negative impacts of a species were assessed separately using a semi-quantitative expert elicitation method. Negative impacts were assessed by 4-5 of the independent experts across the four domains:

1) Economic (market) (2 questions):

- (a) negative impact on yield and management inputs – impact on yield including crop, pasture, forestry or other industries; impact on animal production, weeds acting as alternative hosts for pests and diseases, increases in the cost of production or management.
- (b) Negative impact on the quality of products which also includes market access

2) Environmental (3 questions):

- (a) negative impact on vegetation structure,
- (b) negative impact on biodiversity
- (c) modification of ecosystem function

3) Social (2 questions):

- (a) negative impact on human physical and mental health
- (b) negative impact on social amenity (including services, infrastructure and non-First Nations cultural heritage)

4) Cultural (3 questions):

- (a) negative impact on First Nations culture and cultural heritage (oral traditions, arts, rituals, ceremonies and knowledge);
- (b) negative impact on traditional subsistence and sustenance resources
- (c) negative impact on place-based heritage

For each question, assessors recorded an impact score (Table 5) and their level of confidence in that score (high, medium or low), for both current and potential impacts. The level of confidence was based on the quality of evidence used by the assessors to make their judgement. The scoring scale was non-linear, so that higher categories relating to national-scale impacts were more influential.

Table 5 Scoring scale for impact questions

Category
No impact at any scale
Minor impact at any scale
Medium impact at multi -regional scale or high impact at regional scale
Medium impact at national scale or high impact at multi-regional scale
High impact at national scale

The mean and median scores were analysed, with results presented by current and potential negative impact, total across all four domains and individually for each domain.

Decision making on prioritised species (negative impacts)

The detailed assessment method for the nationally significant negative impacts criteria specified a deliberative system for prioritisation. In this deliberative approach, each component (invasiveness, potential distribution and negative impacts) was considered in decision making. While negative impact was used for ranking, the NEWP SG and WWG considered invasiveness as well as current and future distribution in prioritisation.

Invasiveness results were considered by the NEWP SG to confirm all prioritised species had invasive characteristics. Further, the NEWP SG used this information to consider those species that have a higher invasiveness score may have a potential to spread faster, therefore be prioritised over a species that has similar impacts but is less invasive. Potential distribution results were used by the NEWP SG and WWG in their decision making to consider potential for spread.

Feasibility of management

The aim of the feasibility of management (FoM) assessment was to determine whether there are feasible management solutions for each assessed species that maintain/enhance agricultural productivity/industry, and limit negative economic (market), environmental, social and cultural impacts. This assessment determined whether the species met the EPDNS National Significance criterion 2: has proposed management interventions that are feasible (NBC 2016).

The FoM was assessed by state and territory government representatives from the WWG, who consulted within their organisations where needed on nominated weeds. The representatives had expertise in weed management (on-ground control, research, asset protection, awareness and communication), social political context of weed (stakeholder views and willingness to manage the species), and policy and regulatory frameworks.

FoM was assessed in two parts. Part 1 determined whether there are significant benefits of the species, including economic (market), environmental, social and/or cultural benefits. This section also explored whether there may be stakeholders that value the species differently, to which mutually beneficial management solutions should be considered in Part 2 of the assessment.

Part 2 was a framework that assessed the current management gaps for the weed and whether there are feasible potential management solutions. The assessment considered five main management actions/solutions, including on-ground management, research, policy, knowledge/awareness and asset protection. Within each of the five management solution categories, assessors are asked to identify:

- current management gaps within the category
- feasible potential management solutions within the category
- socio-political support for the feasible potential management solutions

- whether there are benefits (or potential conflicts) from undertaking the proposed management solutions in a nationally coordinated manner.

In undertaking FoM assessments, the WWG assessors considered their own knowledge, drew on additional expertise as well as conducted their own literature review to support their assessment. Information provided by organisations in their nomination form was provided to the assessors to help inform their assessment of the feasibility of management. This included responses to questions 18, 19, 20 and 21 of the nomination form.

ABARES coordinated the FoM assessment process. ABARES chaired an initial meeting with WWG representatives to discuss FoM questions and confirm understanding of the process. WWG representatives then undertook the FoM assessments independently for the species that had been allocated to them. ABARES allocated weeds avoiding conflicts, so that an assessor from a state or territory that nominated a species did not undertake the assessment. FoM assessments were reviewed by a WWG member from a different jurisdiction with no conflicts. A summary of the assessments was compiled by ABARES to assist CSIRO with an independent review of the FoM assessments. The purpose of the review was to ensure consistency and fairness across the assessment panel in the application of the FoM guidelines of the methodology. The WWG made recommendations on those species that have feasible management options to the NEWP SG for review and endorsement.

Benefits from national coordination

The Benefits from National Coordination (BNC) assessment was the third and final component of the NEWP detailed assessment process. The aim of the BNC assessment was to determine those species that would benefit from a nationally coordinated approach to reduce their spread and impacts.

This assessment determined whether the species met EPDNS criterion 3: benefits from national coordination (NBC, 2016). This criterion required that there be a clearly demonstrable benefit from a nationally coordinated approach or plan that outlines the action to be undertaken by all responsible parties. An established weed may have (or potentially have), significant impacts in one or more regions, but would not be considered a nationally significant weed if no particular benefit can be demonstrated by taking a nationally coordinated approach or having a national plan.

This included consideration of:

- whether a national plan is needed and if there is support for a strategic plan from multiple stakeholders
- whether collaboration is needed between government, industry and community stakeholders to implement the national plan
- whether implementation of the national plan would require action across more than one state or territory
- whether the national plan would bring public benefits.

This was assessed by the same WWG representatives (or their nominated proxy) as FoM. In assessing this criterion, assessors undertook a qualitative analysis to determine whether there would be sufficient benefits from taking a nationally coordinated approach to manage the weed.

Information provided by organisations in their nomination form was provided to the assessors to help inform their assessment of benefits from national coordination. This included responses to questions 14, 15 and 16 of the nomination form. Assessors also used relevant results of the nationally significant impacts assessments and the FoM assessments to aid in consideration of responses to the BNC questions.

A panel meeting was held, chaired by DAFF, to discuss input on BNC assessments and determine the assessment for each species. WWG representatives were asked to declare any conflicts prior to the discussion of each species. An independent review of the BNC assessments was undertaken by CSIRO. The purpose of the review was to ensure consistency and fairness across the assessment panel in the application of the BNC assessment methodology across the 29 species. The WWG made recommendations on those species that would benefit from a nationally coordinated approach to the NEWP SG.

Appendix B: Summary of evidence base: species that met the criteria to be considered a national established weed priority

The evidence base for each of the 15 species eligible for consideration as national established weed priorities are summarised in this section, including nationally significant negative impacts, proposed management, and benefits from taking nationally coordinated action for each species.

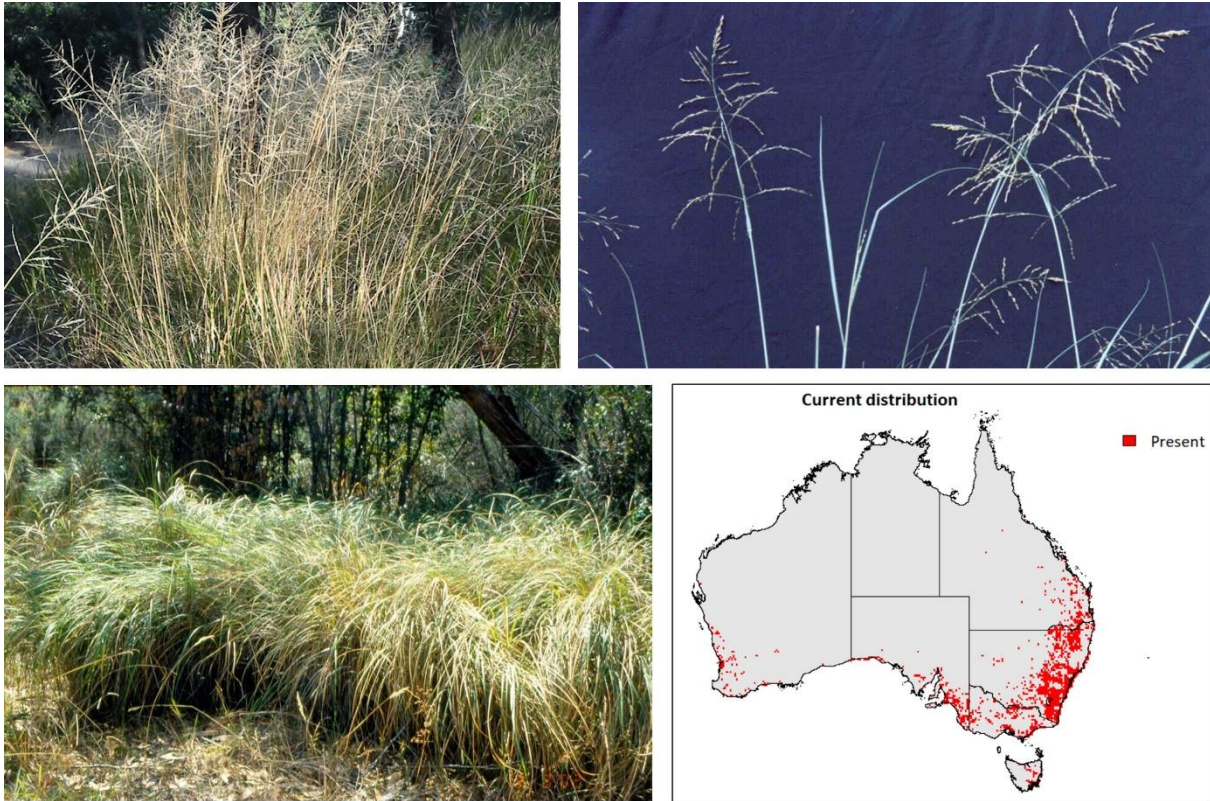
Current and potential negative impacts summary information is derived from information provided by assessors in the expert elicitation process. These summaries, along with the scores for the respective categories, were considered by the NEWP SG and WWG. Each individual statement/justification provided by assessors was not verified. References provided by assessors for the species will be made available on the Weeds Australia NEWP webpage as additional information to this document.

Results for current and potential negative impact presented below are by domain (economic (market), environment, social, cultural), where numbers indicate the question (page 17-19) where it is has been assessed at the magnitude and scale indicated (e.g. high impact at national level).

Numbers and questions are as follows:

- ¹ Impacts on yields and management inputs
- ² Impacts on quality of products
- ³ Impacts on vegetation structure
- ⁴ Impacts on Australian biodiversity
- ⁵ Modification of ecosystem functions
- ⁶ Impacts on human health
- ⁷ Impacts on social amenity
- ⁸ Impacts on oral tradition, practice, ritual and knowledge
- ⁹ Impacts on subsistence, sustenance and craftsmanship resources
- ¹⁰ Impacts on heritage (place based)

African lovegrass (*Eragrostis curvula*)



TOP LEFT: © Sheldon Navie, TOP RIGHT: © The State of Queensland, BOTTOM LEFT: © Government of South Australia, BOTTOM RIGHT: Source: ABARES Current distribution map based on distribution records from the Atlas of Living Australia and additional distribution records supplied by the state and territory WWG as required

Summary of detailed assessment

Invasiveness

African lovegrass is an invasive grass with superior ability to colonise, establish, reproduce and persist. It invades disturbed areas but can also invade undisturbed low fertility grasslands and pastures where it can form dense, monospecific stands. It has many morpho-physiological traits for competitive success and is an ecological transformer. Long distance dispersal is through water, wind and wild and domestic vertebrates, as well as by human means.

Current and potential distribution

African lovegrass is currently present in QLD, NSW, ACT, VIC, TAS, SA and WA. Broad climatic suitability modelling shows it has a potential to spread further through these jurisdictions.

Beneficial uses

African lovegrass is valued by some land managers as drought fodder where specific soil and environmental conditions are met. The cultivar *Eragrostis curvula* cv. Consol has some benefits as it is a more palatable and less weedy pasture species (particularly in northern, central and the southern tablelands of NSW). Consol and other cultivars are also noted for their ability to reduce soil erosion, particularly in sandy soils.

Current and potential negative impacts

Assessed as:

- Current high impact at a regional-multiregional level for environment^{3,4,5}.
- Potential high impact at a multi-regional to national level for economic (market)¹, environment^{3,5} and culture^{8,9}.
- Potential high impact at a national level for environment⁴.

¹ Impacts on yields and management inputs

³ Impacts on vegetation structure

⁴ Impacts on Australian biodiversity

⁵ Modification of ecosystem functions

⁸ Impacts on oral tradition, practice, ritual and knowledge

⁹ Impacts on subsistence, sustenance and craftsmanship resources

Economic (market): African lovegrass is a low-palatability grass that reduces grazing productivity, often halving carrying capacity in severely infested pastures. It reduces pasture quality and feed value with the potential for significant economic losses to the grazing industry. Control is difficult and costly. African lovegrass currently has no impacts on the quality of products, nor restrictions to market access or implications for international and domestic markets.

Environmental: African lovegrass may alter native vegetation by forming monocultures, replacing native species and modifying vegetation structure. It is particularly disruptive in lowland grassy woodlands and overgrazed areas, where it can dominate and negatively impact fire regimes, further degrading ecosystem function. It may threaten Australian biodiversity by outcompeting native species. It negatively impacts several plant species listed under the EPBC Act, including Spiked rice-flower (*Pimelea spicata*), Downy wattle (*Acacia pubescens*), and Grass conostylis (*Conostylis misera*), as well as faunal species such as the endangered Monaro grassland earless dragon (*Tympanocryptis osbornei*). African lovegrass acts as an ecological transformer, disrupting nutrient cycling and landscape resilience across multiple regions in Australia. It can modify key ecosystem functions by altering soil chemistry, reducing microbial activity, and increasing nitrogen levels. Its high biomass and flammable tussocks elevate fuel loads, intensifying fire regimes and frequency.

Social: African lovegrass does not directly impact physical health but may contribute to mental health stress among land managers and producers due to its persistent spread, high control costs, and limited long-term management success. It may negatively impact social amenity by infesting high-value conservation areas, including national parks, nature reserves, and heritage sites. Its presence in public infrastructure and recreational spaces, such as roadsides, footpaths, waterways, and coastal regions may reduce aesthetic and recreational value.

Cultural: African lovegrass may negatively impact First Nations oral traditions and cultural practices by invading ecologically and culturally significant landscapes, such as the Cumberland Plain in NSW. Its spread may threaten native species tied to traditional knowledge and land management, including cultural burning. While current evidence is limited, high-density infestations could reduce access to traditional food sources and materials, if it spreads into culturally significant grasslands. Its continued invasion could affect access to significant sites and disrupt traditional practices, rituals place-based teachings, including cultural burning.

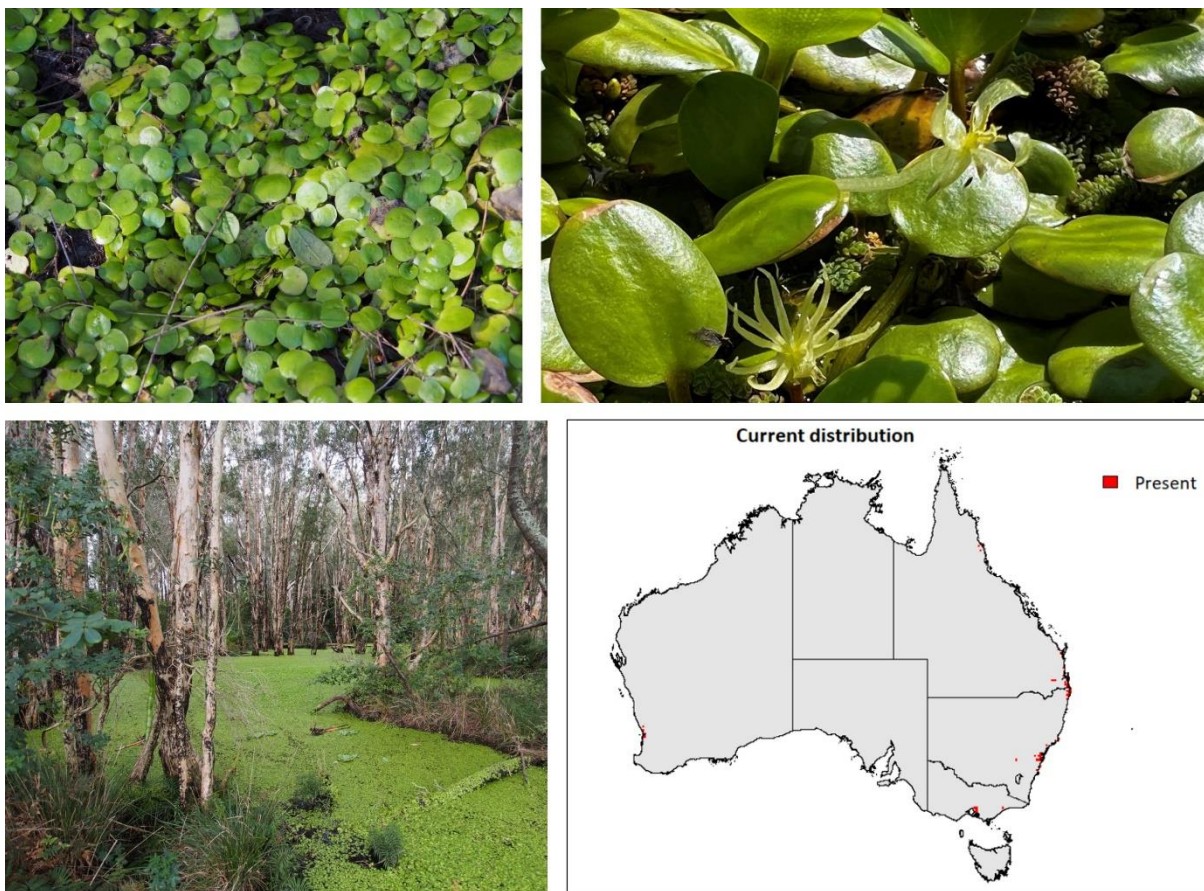
Proposed actions to improve management

Benefits of national plan/approach: Actions to improve management would deliver benefits to both impacted sectors (agriculture and environment) through coordinated research, policy alignment, surveillance, best practice guidelines, strategic planning. It would deliver efficiencies through national coordination by avoiding duplication of effort, enabling cost-effective solutions and partnerships across jurisdictions, sectors and land tenures and increase capacity to effectively manage this weed.

Focus of national plan/approach: Protect high value conservation areas from African lovegrass and reduce negative impacts on agricultural productivity. The following potential management actions have been considered as part of the NEWP detailed assessment process, and would be refined with stakeholders through the development of a national plan.

- 1) **On-ground management actions** – developing integrated control strategies and shared learning; collating and disseminating best practice guidelines for mechanical, chemical and integrated control methods; implementing nationally coordinated research to explore novel biocontrol pathways, including genomic screening and international agent sourcing.
- 2) **Research and development for the species** – improving detection, surveillance and national-scale mapping of African lovegrass infestations using rapid DNA testing, eDNA and remote sensing; establishing citizen science platforms to improve early detection and monitoring of spread dynamics; enhancing overall research prospects to address knowledge gaps.
- 3) **Policy and regulation** – eradicating targeted outlier populations; harmonising legislation and policy; improving industry and government guidelines; developing a nationally endorsed strategic plan for African lovegrass that aligns regional biosecurity efforts, eradication priorities and stakeholder engagement.
- 4) **Capacity building and awareness** – developing updated and targeted communication materials; supporting knowledge collation, extension efforts and determining training needs tailored to different land uses and infestation scales; producing coordinated training modules for landholders, councils, and biosecurity officers, focusing on identification, control techniques and policy obligations; convening regular forums with government, industry, First Nations and community organisations to guide policy development, share learnings, and explore co-investment opportunities for landscape-scale control.
- 5) **Asset protection** – coordinating approaches to protect World Heritage Areas, conservation reserves and intact landscapes; integrating management actions for African lovegrass into other existing Key Threatening Processes.

Amazon frogbit (*Limnobium laevigatum*)



TOP LEFT: © Terry Inkson, TOP RIGHT: © State of New South Wales, BOTTOM LEFT: © Terry Inkson, BOTTOM RIGHT: Source: ABARES Current distribution map based on distribution records from the Atlas of Living Australia and additional distribution records supplied by the state and territory WWG as required

Summary of detailed assessment

Invasiveness

Amazon frogbit is an invasive weed that can invade all waterway types. It forms dense mats that outcompete other aquatic plants and is a transformer as it disrupts light/oxygen. It grows very quickly. Dispersal of seed and vegetative fragments is via water currents, surface winds, birds, human (deliberate via aquarium trade, accidental by watercraft/sharing pond plants).

Current and potential distribution

Amazon frogbit is currently present in NSW, QLD, VIC and WA. Broad climate suitability modelling indicates that only a small proportion of Amazon frogbit's potential distribution in Australia is currently occupied. This species could disperse by human means to longer distances and has the potential to establish throughout Australia.

Beneficial uses

Amazon frogbit is used as an ornamental aquatic plant in the aquarium trade and in garden ponds. It is not managed as a beneficial plant in any specific land use.

Current and potential negative impacts

Assessed as:

- Current high impacts at a regional-multiregional level for environment^{3,4,5}.
- Potential high impact at a multi-regional - national level for social⁷ and culture^{9,10}.
- Potential high impact at a national level for economic (market)¹ and environment^{3,4,5}.

¹ Impacts on yields and management inputs

³ Impacts on vegetation structure

⁴ Impacts on Australian biodiversity

⁵ Modification of ecosystem functions

⁷ Impacts on social amenity

⁹ Impacts on subsistence, sustenance and craftsmanship resources

¹⁰ Impacts on heritage (place based)

Economic (market): Amazon frogbit poses risks to agricultural productivity. Control methods such as manual removal, herbicide application, and mechanical harvesting are labour-intensive, costly, and require ongoing monitoring. Infestations can obstruct irrigation channels and potentially impact hydroelectric power generation. Blockages to intake pipes are a threat to electricity generation at Barron Falls hydro power station but is avoided by booms and manual removal within the supply weir; such impacts are likely at other generators if left unchecked. In aquaculture, dense mats may cause hypoxia, reducing fish growth and survival. While current infestations in Australia are limited, the species has high climate suitability across key irrigation regions, indicating a potential future risk. While it does not directly affect agricultural product quality, chemical treatments may interfere with irrigation for livestock. Infestations may threaten organic certification due to contamination risks.

Environmental: Amazon frogbit can alter aquatic vegetation structure by forming dense surface mats that outcompete native floating and emergent species, leading to monocultures and reduced biodiversity. These mats can block sunlight, suppress submerged plants and disrupt vertical habitat complexity. It is a threat to Australian biodiversity, particularly in ecologically and culturally important regions such as the Howard Springs, Kakadu floodplains, Barron River catchment, and the Ord River system. It can disrupt freshwater ecosystem functions including nutrient cycling, promotes eutrophication, and increases methane emissions. Water flow is impeded, affecting hydrology, flood regimes, potentially altering water quality and downstream ecosystems, including reef catchments. Its ability to thrive in both freshwater and saline environments, and under low light conditions, increases its potential for widespread environmental impact in aquatic environments across multiple states.

Social: Amazon frogbit may pose indirect risks to human health. Dense mats can create stagnant water ideal for mosquito breeding, potentially increasing populations of disease vectors such as *Aedes* and *Culex* species. Infestations may degrade water quality, which can lead to foul odours, algal blooms, and unsafe conditions for drinking and recreation, particularly affecting remote communities. It may impact drainage systems in the future, increasing flood risk. The loss of access to recreationally significant waterways may negatively affect mental health and wellbeing. It negatively impacts social amenity by obstructing recreational activities such as swimming, fishing, and boating, and degrading the scenic and cultural value of waterways. Infestations restrict access to waterbodies, pose safety risks, and diminish the quality of eco- and cultural-tourism experiences. These effects are particularly concerning in regions like the NT, Far North QLD, and the Kimberley,

where waterways hold strong cultural, recreational, and economic significance. Continued spread is likely to mirror the amenity losses seen with other invasive aquatic weeds.

Cultural: Amazon frogbit may impact First Nations oral traditions, cultural practices, and knowledge systems by degrading culturally significant wetlands across Australia. Infestations may restrict access to ceremonial and sacred sites, disrupt seasonal ecological indicators, and displace culturally important plant and animal species. These changes can hinder intergenerational knowledge sharing and the transmission of place-based stories and language. It may restrict access to traditional subsistence and craftsmanship resources by degrading wetlands and riparian zones vital for harvesting fish, bush food, water harvesting and materials used in weaving and toolmaking. While direct damage to built infrastructure is unlikely, access to traditional structures such as fish traps may be hindered. First Nations communities across Northern QLD have expressed concern over the potential loss of culturally significant places due to Amazon frogbit's spread.

Proposed actions to improve management

Benefits of national plan/approach: Actions to improve management would deliver benefits to impacted sectors/stakeholders (agriculture, aquaculture, water supply/catchment managers, conservation and First nation groups, Councils, land managers) and avoid/prevent costs by preventing further spread. Would deliver clear efficiencies through national coordination by avoiding duplication, enabling cost-effective solutions and partnerships, funding broader studies across diverse environments, and supporting collaboration between groups.

Focus of national plan/approach: Prevent further spread and reduce negative impacts of Amazon frogbit across all sectors (economic, environment, social and cultural). The following potential management actions have been considered as part of the NEWP detailed assessment process and would be refined with stakeholders through the development of a national plan.

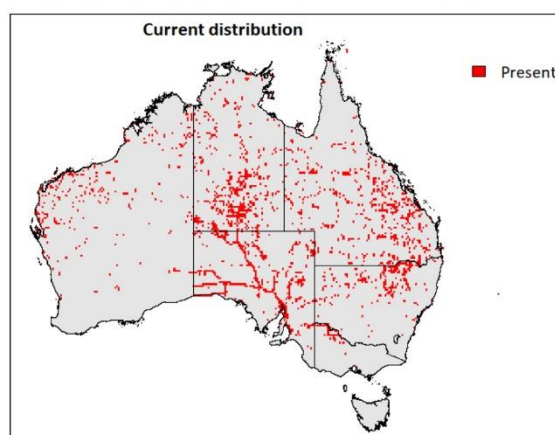
- 1) **On-ground management actions** – supporting research and development for chemical, mechanical, habitat manipulation techniques and integrated control methods; developing a biocontrol agent.
- 2) **Research and development for the species** – addressing knowledge gaps in dispersal; understanding/managing aquarium trade spread routes, online trade; improving surveillance capacity and mapping all infestation locations; supporting research and development for social licence to apply herbicide to waterbodies by understanding and demonstrating the negative impacts and benefits of control in aquatic environments and understanding social perspectives of herbicide use (vs other options) in waterbodies; sharing resources and knowledge.
- 3) **Policy and regulation** – developing nationally aligned policies and declarations (for sale and trade) to prevent online trade across borders; developing tools for improved compliance mechanisms for online and retail aquarium trade, including mandatory labelling, seller education and penalties for illegal sale or dumping; integrating frogbit into the national list of naturalised invasive and potentially invasive garden escape plants.
- 4) **Capacity building and awareness** – implementing a coordinated approach for skills development and training, distribution and marketing of communication and awareness material; strengthening the existing regionally coordinated early detection and response protocols to enable swift action when new infestations are detected (i.e., training local

authorities and community groups in identification, reporting, and containment procedures); coordinating citizen science initiatives across jurisdictions to crowdsource frogbit sightings and support mapping efforts (i.e., mobile apps, local workshops, and partnerships with schools, Landcare groups, and recreational water users).

- 5) **Asset protection** – protecting Ramsar wetlands, priority aquatic ecosystems and threatened aquatic species, World Heritage sites, conservation reserves and intact landscapes; developing plans for future restoration of aquatic ecosystems impacted by frogbit, including replanting native aquatic vegetation, improving water flow regimes and enhancing habitat complexity to resist reinvasion, drawing on lessons from overseas or other aquatic weeds that are more widespread with higher abundance; coordinating frogbit control with other aquatic weed programs (e.g., salvinia (*Salvinia molesta*), water hyacinth (*Eichhornia crassipes*)) to maximise efficiency, reduce duplication, and leverage shared resources, especially in high-risk catchments and Ramsar listed wetlands.

Buffel grass (*Cenchrus ciliaris*)

(Group nomination: includes the three species *Cenchrus ciliaris*, *C. pennisetiformis* and *C. setiger*.)



TOP LEFT: © Government of South Australia, TOP RIGHT: © Sheldon Navie, BOTTOM LEFT: © Northern Territory Government of Australia, BOTTOM RIGHT: Source: ABARES Current distribution map based on distribution records from the Atlas of Living Australia and additional distribution records supplied by the state and territory WWG as required

Summary of detailed assessment

Invasiveness

Buffel grass is an invasive grass that invades a wide variety of grassy ecosystems and grows mostly on sandy soils. It spreads along roadsides and drainage lines. It commonly escapes from plantings, especially in disturbed habitats and fire affected areas. Open to semi-open habitats are especially vulnerable. It is a prolific seed producer. Seed bank persistence is greater than 5 years. It is dispersed naturally via water, wind and wild vertebrates. It is also dispersed by human means deliberately (planted for livestock) and accidentally (vehicles and mowing, contaminated hay).

Current and potential distribution

Buffel grass is currently present in NSW, NT, QLD, SA, VIC and WA. Broad climatic suitability modelling shows it has a potential to spread further through these jurisdictions and potential to establish in ACT. It is not predicted to occupy regions of TAS.

Beneficial uses

Buffel grass is beneficial to rangeland pastoral situations (land use) in tropical, sub-tropical, semi-arid, arid, southern temperate and Mediterranean land uses of Australia. It is a highly valuable pastoral fodder for cattle with estimates of the economic value of beef production from Buffel grass pastures in the QLD of up to \$4.8 billion (QDPI, 2025). Buffel grass also controls erosion in some

contexts (used for soil stabilisation). It provides feed security for pastoral properties during periods of low rainfall. A range of stakeholders highly value the species, particularly rangeland pastoralists in QLD and NT, who consider it highly valuable beef fodder, Buffel grass seed producers for domestic and international markets and indirect beneficiaries who support and derive income from members of pastoral industries.

Current and potential negative impacts

Assessed as:

- Current high impacts at a national level for environment^{3,4,5} and culture^{8,9,10}.
- Potential high impact at a national level for environment^{3,4,5} and culture^{8,9,10}.

³ Impacts on vegetation structure

⁴ Impacts on Australian biodiversity

⁵ Modification of ecosystem functions

⁸ Impacts on oral tradition, practice, ritual and knowledge

⁹ Impacts on subsistence, sustenance and craftsmanship resources

¹⁰ Impacts on heritage (place based)

Environmental: In native ecosystems, Buffel grass can alter vegetation structure by outcompeting native seedlings and ground layer species such as grasses, herbs, rock ferns, climbers and shrubs. Its dominance can lead to reduced native plant diversity and the replacement of complex plant mosaics with a uniform monoculture. Some of the understorey groups have lost up to two-thirds of abundance with Buffel grass invasion. This homogenisation simplifies habitat structure and increases ground biomass, resulting in higher fuel loads and elevated fire risk. Structural and compositional changes to plant communities is causing negative impacts on native flora. Negative impacts on native vegetation have been recorded across a diverse range of vegetation types in SA, NT, WA and QLD from open grasslands to closed woodlands.

In natural systems, Buffel grass can pose a serious threat to Australian biodiversity by degrading native habitats and reducing ecological complexity. Its invasion leads to the loss of native grasses, shrubs, and patchy vegetation, which in turn diminishes food sources and shelter for fauna, particularly small mammals, reptiles, and ground-nesting birds. Studies show declines in invertebrate populations, such as ants, and altered soil microbiomes, affecting insectivorous species. A study showed that reptile abundance drops significantly in invaded areas but recovers when native vegetation is restored. Currently, over 30 EPBC Act listed threatened species are impacted or are at risk from Buffel grass invasion.

In native ecosystems, Buffel grass may modify ecosystem functions by altering soil properties, hydrology and fire regimes. In native ecosystems, its dense root systems may reduce water infiltration and uptake soil moisture, which may limit water availability for other plants. Buffel grass accumulates dry biomass rapidly after rainfall, cures quickly, and is poorly decomposed by native termites, resulting in persistent fuel loads that may intensify fire frequency, spread, and severity, even in cooler months or drought conditions. These altered fire regimes may threaten keystone species and critical habitats, including riparian zones and arid wetlands. Buffel grass invasion may also disrupt decomposition cycles of the grasslands it invades.

Cultural: Buffel grass invasion has negative impacts on oral tradition, cultural practice, and Indigenous knowledge systems. By altering landscapes and displacing culturally significant plants and

animals, it can disrupt Dreaming tracks, storylines, and seasonal cues that are central to place-based oral histories. This can make it difficult for Elders to pass on knowledge in context, weakening intergenerational cultural transmission. Buffel can also impede walking on Country and learning through direct experience, with major negative impacts on culturally significant species and traditional fire practices. These changes may contribute to cultural disconnection, distress, and reduced quality of life.

Buffel grass may negatively impact subsistence, sustenance, and craftsmanship resources by displacing native plants traditionally used for bush foods, medicines, weaving, and tools, and impacting hunting grounds. This loss may undermine the transmission of plant knowledge and cultural practices, especially among younger generations. As culturally significant species disappear, traditional names, uses, and harvesting techniques risk being forgotten. As Buffel can reduce habitat and food sources for native animals, it may contribute to emotional distress among First Nations people who feel unable to care for Country and its wildlife.

Buffel grass can have negative impacts on First Nations cultural heritage by damaging place-based sacred and ceremonial sites. Its dense growth can make these areas difficult to access, visually obscure important landmarks, and increase vulnerability to intense wildfires. Fires fuelled by Buffel grass have destroyed culturally significant features such as rock art, scar trees, stone arrangements, and burial grounds.

These cultural impacts are widespread across native ecosystems and culturally significant sites in SA, WA, the NT, and parts of QLD and NSW, and are expected to worsen within these systems with continued Buffel grass invasions.

Social: Buffel grass may pose risks to human health, both physically and mentally. Its role in fuelling intense, fast-moving wildfires increases the danger of burns, smoke inhalation, heat stress, and even fatalities. Additionally, pollen and dust from Buffel grass can trigger allergic reactions. Mental health impacts may occur for Indigenous communities, who experience cultural loss due to the displacement of native plants used in traditional practices. Frequent and destructive fires can also contribute to anxiety, trauma, and stress, especially among those who have lost property or sacred sites. Regions like Alice Springs have seen repeated Buffel grass fuelled fire events, impacting healthcare systems and increasing emergency department presentations.

Buffel grass may negatively affect social amenity by limiting access to culturally and socially significant landscapes. Buffel grass fuelled fires can damage infrastructure and natural attractions, potentially reducing tourism and increasing community disruption. These negative impacts may worsen with continued invasion, affecting vulnerable groups including environmental stewards, and tourism operators.

Economic (market): Some negative impacts for bush foods and horticulture, particularly for First Nations enterprises. Buffel grass invasions may also degrade culturally significant landscapes, affecting economic activities tied to Country. Buffel grass was assessed to not have negative impacts on market access or product quality of other commodities.

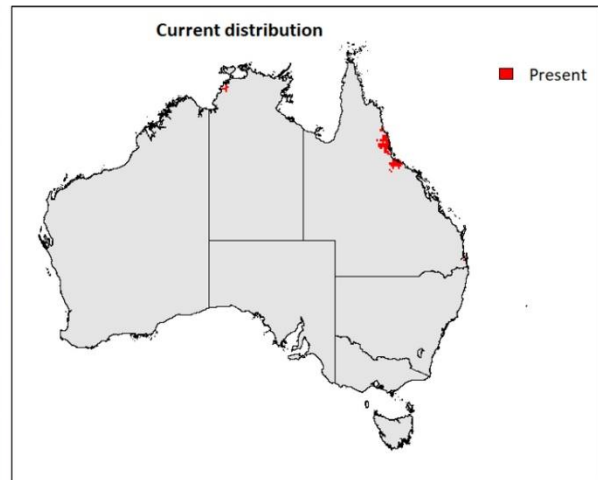
Proposed actions to improve management

Benefits of national plan/approach: Efficiencies would be achieved through coordinating actions. Collaboration on improved control methods, surveillance, mapping and guidelines would achieve efficiencies and avoid duplication of effort across conservation and First Nations groups and other landholders like mining and energy companies required to manage Buffel grass (for example, in WA some mining companies have Buffel grass included in their weed management plan as a condition of the mine environmental approval). Stakeholder engagement and communication at the regional level would support landholders, Indigenous groups, industry, and community organisations to work towards shared goals. For example, focusing on shared interests, such as protecting high-value conservation assets, maintaining productive rangelands, and supporting rural livelihoods, while also acknowledging the legitimate concerns of each sector. A coordinated approach would also provide a platform for regular forums and knowledge exchange, allowing lessons learned in one region to inform management elsewhere.

Focus of national plan/approach: Protect high value environmental and cultural assets from Buffel grass, without adversely impacting grazing systems where it is valued. The following potential management actions have been considered as part of the NEWP detailed assessment process and would be refined with stakeholders through the development of a national plan.

- 1) **On-ground management actions** – advancing herbicide trials and addressing evolving herbicide resistance; approaches to address the limitation of current herbicides application (availability of clean water for tank mixes, workforce availability, and narrow application window); exploring alternatives to current chemicals, including organic and non-chemical methods (excluding biological control); improved understanding of non-chemical methods and how to apply them in local contexts, e.g. slashing, fence line grazing, and integrated fire systems; developing and sharing integrated management strategies and best practice guidelines across jurisdictions to mitigate environmental, social and cultural impacts.
- 2) **Research and development for the species** – improving identification and detection tools; enhancing surveillance methods (such as remote sensing, drones, and consistent protocols), spread modelling to update infestation locations regularly; advancing research in ecology and management, including social and cultural-focused research; sharing resources and knowledge.
- 3) **Capacity building and awareness** – facilitating inclusive, national-level engagement with landholders, Indigenous groups, industry, and community organisations to align efforts and share timely and accurate information; supporting targeted research (e.g. social science to enhance collaboration) and capacity-building initiatives to improve management outcomes; promoting constructive, cross-sector conversations highlighting both the benefits of Buffel grass for production and its environmental and cultural risks; implementing coordinated, landscape-scale strategies that reflect shared goals and regional needs such as development of voluntary industry guidelines for graziers to minimise the spread off their property and explore ways to reduce spread along transport corridors and in mining; establishing regular, nationally coordinated knowledge exchange forums to share lessons learned and inform adaptive management across regions.
- 4) **Asset protection** – supporting coordinated planning and investment in management programs especially for high-priority assets at risk from Buffel grass invasion such as conservation reserves, World Heritage areas, and sites of cultural significance.

Siam weed (*Chromolaena odorata*)



TOP LEFT: © The State of Queensland, TOP RIGHT: © The State of Queensland, BOTTOM LEFT: © The State of Queensland, BOTTOM RIGHT: Source: ABARES Current distribution map based on distribution records from the Atlas of Living Australia and additional distribution records supplied by the state and territory WWG as required

Summary of detailed assessment

Invasiveness

Siam weed is invasive. It establishes quickly, forming large, dense infestations. It will grow in disturbed and undisturbed areas and readily invades a wide variety of habitats including creeks, riverbanks, granite hill slopes, remnant patches of rainforests, saline and coastal environments. It can smother crops and native vegetation, out-compete pastures, due to its high growth rate. One year old plants produce seeds, and it can also vegetatively spread, reshooting from the base. It disperses via water, wind and wild vertebrates, readily by humans (accidentally), contaminated produce and livestock.

Current and potential distribution

Siam weed is currently present in NT and QLD, with potential to establish in NSW and WA. Broad climate suitability modelling indicates that only a small proportion of Siam weed's potential distribution in Australia is currently occupied.

Beneficial uses

There is no known benefit of Siam weed.

Current and potential negative impacts

Assessed as:

- Current medium impacts at a regional – multiregional level for environment^{1,3,4,5}.
- Potential high impact at a multi-regional to national level for environment^{3,4,5}, social^{6,7} and culture^{8,9,10}.
- Potential high impact at a national level for economic (market)¹.

¹ Impacts on yields and management inputs

³ Impacts on vegetation structure

⁴ Impacts on Australian biodiversity

⁵ Modification of ecosystem functions

⁶ Impacts on human health

⁷ Impacts on social amenity

⁸ Impacts on oral tradition, practice, ritual and knowledge

⁹ Impacts on subsistence, sustenance and craftsmanship resources

¹⁰ Impacts on heritage (place based)

Economic (market): Siam weed can invade crops (reduces yields of sugar cane and dry rice), horticulture (banana, pawpaw), can reduce pasture productivity and is toxic to animals. It presents a potential major economic cost to northern and eastern Australia, with projected management costs reaching up to \$14 million annually by 2044. It has rapid growth of up to 5 meters per year. It can contaminate fodder and poses a risk to livestock via toxic alkaloids and high nitrate levels. These toxic effects have led to cattle deaths and abortions in other tropical regions. It can also host seed-borne fungal pathogens which can damage food crops. Industries such as mining may face additional costs due to the need for strict biosecurity protocols to prevent seed spread. It can impact quality of fodder.

Environmental: Siam weed has very rapid growth, can form dense thickets, which can smother native vegetation and can alter vegetation structure, particularly in savannah ecosystems. Once established, the understorey only receives about 7% of potential sunlight making it almost impossible for other seedlings to grow. It is a risk to Australian biodiversity. Siam weed infestations in QLD and the NT pose increased threats to numerous species listed or proposed for listing under the IUCN Red List. In the NT, Siam weed overlaps with the habitat or range of over 30 vulnerable, endangered, and critically endangered species, such as the southern black-throated finch (*Poephila cincta cincta*) and the Tiwi hooded robin (*Melanodryas cucullata melvillensis*). It can alter nutrient cycling and natural fire regimes.

Social: Siam weed impacts human health and social amenity. It is known to cause skin allergies, respiratory issues, and wounds in plantation workers. As with other invasive plants, management can cause financial stress to landowners and pastoralists, causing serious feelings of frustration and depression for affected communities. Dense thickets may impact amenity by reducing access to riverbanks, lakes, campsites and walking tracks. It can impact the visitor experience to reserves and national parks.

Cultural: Siam weed has rapid and dense growth which can increase the fire risk and then damage cultural assets like sacred trees and rock art sites. In places like Bulgul country, it has already begun to compromise culturally significant areas, including Marindja Hill, a sacred site. Infestations threaten access to traditional resources such as Darwin stringybark (*Eucalyptus tetradonta*) and Darwin woollybutt (*Eucalyptus miniata*), which are used for didgeridoo construction.

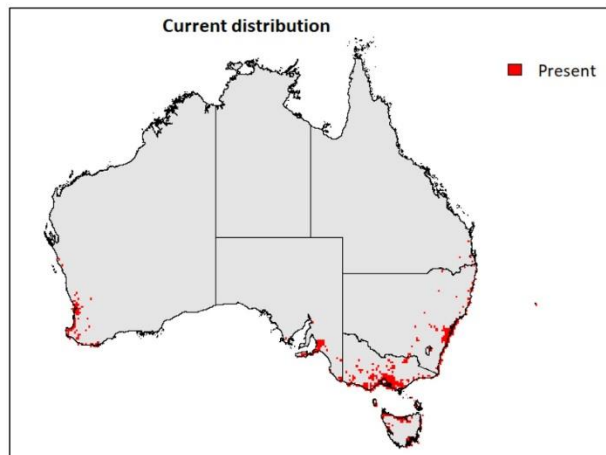
Proposed actions to improve management

Benefits of national plan/approach: There are strong efficiencies to coordinating management actions via a national plan/approach, including efficient use of resources, to raise profile (continue priority work on this species) and drive improvements in control. There are broad benefits to all stakeholder groups through preventing further spread and rapid, coordinated action to manage new infestations. QLD and NT are working effectively, however a national plan will address gaps and leverage resources to areas of need to quickly act on outbreaks, avoiding further costs.

Focus of national plan/approach: Preventing further spread of Siam weed and rapidly detecting and addressing new infestations. The following identified feasible actions have been considered as part of the NEWP detailed assessment process and would be refined with stakeholders through the development of a national plan.

- 1) **On-ground management actions** – testing host specificity, mass rearing and release of the new biocontrol agent (species is included in the top 20 priority list in the National Weed Biocontrol Prioritisation Results report); improving chemical and mechanical options for control as part of an integrated weed management (IWM) approach.
- 2) **Research and development for the species** – identification of pathways (within Australia and from Indonesia), improving surveillance and mapping capabilities through new detection techniques such as eDNA, remote sensing; improving biology/ecology knowledge.
- 3) **Policy and regulation** – developing nationally consistent industry guidelines for grazing sector; developing a National Siam Weed Strategy and a national surveillance strategy; developing national priority areas for regional/local eradication and prevention; developing nationally coordinated response plans; National coordination would be highly beneficial, building on efforts and achievements by jurisdictions involved in the National Siam Weed Working Group.
- 4) **Capacity building and awareness** – developing best practice management tools; improving response skills and training.
- 5) **Asset protection** – conducting a full assessment of impacts on priority assets; developing consistent asset protection plans and approaches across sites of international importance and remote areas, world heritage sites, conservation reserves and intact landscapes.

Arum lily (*Zantedeschia aethiopica*)



TOP LEFT: © Sheldon Navie, TOP RIGHT: Jenny Conolly, iNaturalist, [CCO 1.0](#), BOTTOM LEFT: Jenny Conolly, iNaturalist, [CCO 1.0](#), BOTTOM RIGHT: Source: ABARES Current distribution map based on distribution records from the Atlas of Living Australia and additional distribution records supplied by the state and territory WWG as required

Summary of detailed assessment

Invasiveness

Arum lily grows in very dense monocultures and creates large monospecific infestations. It can invade disturbed and undisturbed wetland habitats and is invasive in riparian zones. It aggressively outcompetes other plants and has multiple traits that make it highly competitive, such as its size, clumping nature, extensive underground storage (tubers) and being unpalatable to grazing/browsing animals. It reproduces sexually and asexually. Long distance dispersal is by water, wild vertebrates (birds, foxes), and livestock. It is also spread by human means, both deliberately (sold by nurseries, online and plant markets) and accidentally (in garden waste, contaminated soil).

Current and potential distribution

Arum lily is currently present in ACT, NSW, QLD, SA, TAS, VIC and WA. Broad climatic suitability modelling shows it has a potential to spread further through these jurisdictions.

Beneficial uses

Arum lily can be valued as an ornamental plant and is beneficial to the garden industry as a traded species. It is not managed as a beneficial plant in any specific land use.

Current and potential negative impacts

Assessed as:

- Current high impacts at a regional – multi-regional level (or medium impact at multi regional – national) for environment^{4,5}.
- Potential high impact at a multi-regional level (or medium impact at national level) for economic (market)¹ and environment^{3,4,5}.

¹ Impacts on yields and management inputs

³ Impacts on vegetation structure

⁴ Impacts on Australian biodiversity

⁵ Modification of ecosystem functions

Economic (market): Arum lily can reduce agricultural productivity by displacing pasture species and limiting grazing land. It is toxic to livestock, with confirmed cases of sheep deaths, though is generally unpalatable. Control requires long-term investment in manual removal, herbicide use, and proper disposal, contributing to high management costs. While it affects pasture quality, market access is unlikely to be impacted.

Environmental: Arum lily may alter native vegetation structure, may pose a threat to Australian biodiversity, and may disrupt key ecosystem processes, particularly in WA forests and wetlands. It forms monocultures that can displace understorey species and alters habitat for native fauna. It can clog waterways, impede water flow and alter hydrological dynamics. Fire regimes and successional processes may also be affected.

Social: Arum lily is toxic to humans, pets, and livestock, with rare but serious health risks. Its spread in urban and natural areas may reduce recreational value and limits safe use of public spaces. Broader amenity impacts are likely as infestations grow.

Cultural: Arum lily may displace native plants traditionally used by Aboriginal communities for food, medicine, craft materials, and cultural practices, leading to potential loss of knowledge and disruption of oral traditions, and cultural practices tied to these materials. Arum lily may pose a risk to First Nations cultural heritage by invading significant sites such as Yallingup, an area important to the Noongar people. Its spread into wetlands and waterways, often concentrated in areas of cultural significance may impact undocumented sacred sites and disrupt connections to Country.

Proposed actions to improve management

Benefits of national plan/approach: Actions would deliver benefits to conservation sectors/stakeholders and graziers (through a focus on improved control techniques, improved mapping, sharing best practice, harmonising policy). Actions to improve management would deliver benefits to impacted sectors/stakeholders to avoid/prevent costs through active containment. Would deliver efficiencies through national coordination given impact across seven jurisdictions - avoiding duplication, facilitating research and new tools for use across diverse environments: pooling expertise and resources and supporting collaboration between groups.

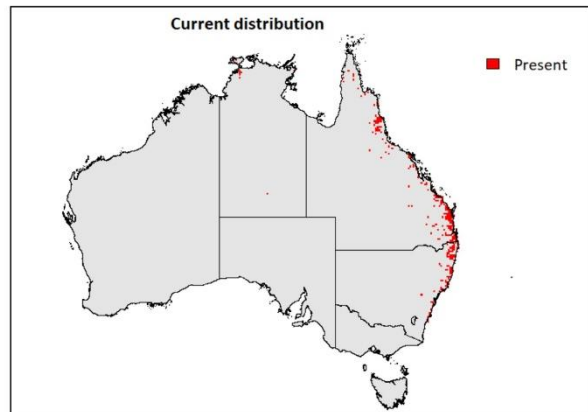
Focus of national plan/approach: Prevent further spread and reduce negative impacts of arum lily on nationally significant conservation assets and agricultural productivity (impacts to pasture) and cultural assets. The following potential management actions have been considered as part of the

NEWP detailed assessment process and would be refined with stakeholders through the development of a national plan.

- 1) **On-ground management actions** – Detection and control of infestations need to be done quickly to minimise future costs; Conduct new herbicide trials across habitat types; exploring alternative mechanical control options and ensure sharing best management practices is a priority.
- 2) **Research and development for the species** – improving detection and infestation mapping (e.g., eDNA, remote sensing); supporting research and development to address biological and ecological knowledge gaps; implementing exploratory biocontrol research.
- 3) **Policy and regulation** – harmonising legislation and policy (i.e., nationally consistent ban from sale/trade); implementing coordinated containment efforts; engaging with nursery and horticultural industries, community groups, and local governments to address potential conflicts (e.g., ornamental trade vs control efforts); clarifying the risks of cultivars and build consensus for coordinated action.
- 4) **Capacity building and awareness** – sharing knowledge across sectors and stakeholder groups; extending learnings from WA to other regions (Southeastern Australia); building capacity and supporting community initiatives.
- 5) **Asset protection** – conducting a full assessment of impacts on priority assets at risk; prioritising control efforts to protect assets at risk; implementing a strategic plan for asset protection especially for high-value conservation sites (e.g., coastal, littoral and riverine).

Giant rat's tail grass (*Sporobolus pyramidalis*)

(Group nomination: includes the five species *Sporobolus pyramidalis*, *S. natalensis*, *S. jacquemontii*, *S. fertilis* and *S. africanus*.)



TOP LEFT: © The State of Queensland, TOP RIGHT: © The State of Queensland, BOTTOM LEFT: © The State of Queensland, BOTTOM RIGHT: Source: ABARES Current distribution map based on distribution records from the Atlas of Living Australia and additional distribution records supplied by the state and territory WWG as required

Summary of detailed assessment

Invasiveness

Giant rat's tail grass is an invasive tussock grass that invades pasture, native grasslands, woodlands and wetlands. It replaces native plants. It is very tolerant of environmental stress. It is a prolific seed producer, and a significant proportion of seeds remain viable for up to 10 years. It is dispersed through waterways, wild vertebrates, livestock, footwear and vehicles.

Current and potential distribution

Giant rat's tail grass is currently present in NSW, NT and QLD. Broad climatic suitability modelling shows it has a potential to spread further through these jurisdictions and may be able to establish in WA.

Beneficial uses

There is no known benefit of Giant rat's tail grass.

Current and potential negative impacts

Assessed as:

- Current high impacts at a regional – multiregional (or medium at a multi-regional – national) level for economic (market)^{1,2} and social⁶.
- Potential high impact at a regional - multi-regional (or medium at multi-regional-national) level for economic (market)², environment^{4,5}, social^{6,7} and cultural^{8,9}.
- Potential high impact at a multi-regional – national level for economic (market)¹, environment³ and culture¹⁰.

¹ Impacts on yields and management inputs

² Impacts on quality of products

³ Impacts on vegetation structure

⁴ Impacts on Australian biodiversity

⁵ Modification of ecosystem functions

⁶ Impacts on human health

⁷ Impacts on social amenity

⁸ Impacts on oral tradition, practice, ritual and knowledge

⁹ Impacts on subsistence, sustenance and craftsmanship resources

¹⁰ Impacts on heritage (place based)

Economic (market): Giant rat's tail grass reduces pasture productivity and increases management costs across northern NSW and QLD. Pasture yields can be reduced by 50–80%, depending on infestation severity. It can affect weight gain, fertility, and weaning rates of livestock due to poor palatability and potential dental injury from mature tussocks. Labor requirements can be high due to repeated herbicide applications, equipment hygiene, and pasture reseeding. QLD graziers spend significant amounts annually to control Giant rat's tail grass. Seed viability is up to 10 years, requiring long-term, integrated control strategies. Emerging resistance to glyphosate and flupropanate complicates control. Infestations can devalue grazing land. Effective management requires strict farm hygiene protocols and restricted access. *Sporobolus* weed grasses are estimated to cost the grazing industry up to \$60 million per year in lost productivity, control costs and lowered land values. Giant rat's tail grass may reduce the quality of agricultural products and may pose a risk to market access. In livestock production, it lowers weight gain, carcass condition, and meat grades, while also reducing milk yield and quality. Contaminated hay and silage have lower palatability, spread seed, and diminish feed value. Contaminated fodder, mulch, or seed from infested areas may face reduced saleability and certification risks. Post-harvest cleaning of machinery is essential to prevent seed spread, alongside integrated control measures. Increased reliance on herbicides, raises concerns for residue management, market certification, and clarity around withholding periods for cattle.

Environmental: Its capacity to invade grasslands, woodlands, wetlands, and conservation reserves highlights its potential for widespread negative environmental impacts. Giant rat's tail grass may alter vegetation structure by reducing species richness and native plant diversity, forming dense monocultures that dominate ground cover. It poses a threat to rangeland biodiversity in central and northern QLD and has been recorded invading EPBC Act listed Coastal Floodplain Eucalypt Forest of eastern Australia. It may disrupt key ecosystem processes. Its slow-decomposing litter may alter nutrient cycling, while reduced groundcover may increase erosion risk. Dense tussocks can elevate fuel loads, intensify fire regimes and reinforce fire–weed feedback loops. Deep root systems can reduce water infiltration and alter local hydrology, while the loss of floral diversity may diminish habitat for pollinators and other fauna.

Social: Giant rat's tail grass has no known direct effects on human health but poses significant indirect risks. Physical impacts may arise from smoke inhalation, fire injuries, allergen exposure, and chemical use in control. Mental health may be impacted, with stress, anxiety, financial strain, and loss of cultural connection reported among farmers and rural communities due to ongoing management costs, reduced productivity, reinfestation risks, and declining property values. Although formal research is limited, experiences with similar pasture weeds suggest long-term mental health pressures. Giant rat's tail grass may reduce social amenity by limiting recreational access, degrading landscapes, and disrupting cultural and community events.

Cultural: Infestations of Giant rat's tail grass in native grasslands and woodlands may exacerbate challenges for First Nations people maintaining cultural practices, sustenance, and connection to Country. Dense infestation can restrict access to sacred and ceremonial sites, displace culturally significant plants and animals, and disrupt traditional fire management practices. Its spread may reduce opportunities to teach and practice cultural knowledge on Country, undermining oral traditions, rituals, and ecological stewardship. It can reduce the availability of bush foods, medicinal plants, and materials for traditional crafts by displacing native species and altering habitat.

Proposed actions to improve management

Benefits of national plan/approach: Actions to improve management would deliver benefits to both impacted sectors (agriculture and environment) through coordinated research, policy alignment, surveillance, best practice guidelines, strategic planning. Would deliver efficiencies through national coordination by avoiding duplication of effort, enabling cost-effective solutions and partnerships across jurisdictions, sectors and land tenures and increase capacity to effectively manage this weed.

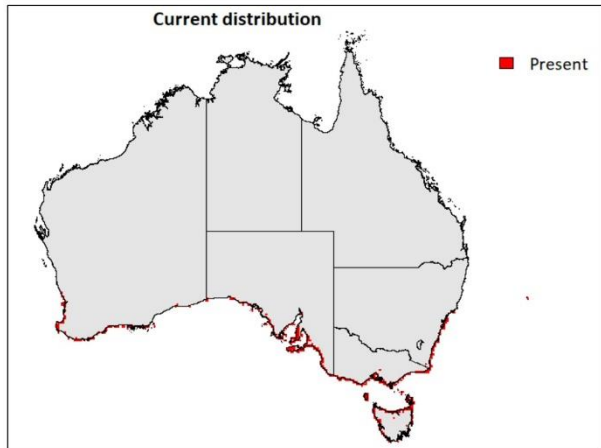
Focus of national plan/approach: Prevent further spread and reduce negative impact of this species on agriculture (grazing) and high value environmental assets. The following potential management actions have been considered as part of the NEWP detailed assessment process and would be refined with stakeholders through the development of a national plan.

- 1) **On-ground management actions** – supporting innovation in chemical use including management of potential herbicide resistance for current chemicals and to reduce costs; supporting innovation for mechanical methods and further integrated weed management (i.e., developing coordinated post-control restoration strategies to reduce reinvasion risk and supporting ecosystem recovery, such as reseeding with competitive native grasses or tailored revegetation plans).
- 2) **Research and development for the species** – developing tools to improve detection; standardising surveillance protocols and mapping to improve knowledge of distribution; identifying and managing key dispersal pathways; establishing a nationally coordinated surveillance program using remote sensing, eDNA, and citizen science platforms to enhance early detection and monitoring of spread dynamics; implementing exploratory biocontrol research (classical and non-classical) by formalising a national biocontrol research pipeline.
- 3) **Policy and regulation** – improving containment zones/movement controls and planning spread prevention; developing appropriate declarations, guidelines, policies and containment options; convening regular forums with government, industry, First Nations and community

organisations to guide policy development, share learnings, and align regional efforts with national priorities.

- 4) **Capacity building and awareness** – developing and distributing more information to raise public awareness about the impacts; improving collaborations between industry and state/territory and regional groups; supporting training opportunities.
- 5) **Asset protection** – identifying and prioritising nationally significant assets for protection; implementing a national scale invasive grasses WoNS coordinated initiative; developing coordinated, post-control restoration strategies to reduce reinvasion risk and support ecosystem recovery, such as reseeding with competitive native grasses or tailored revegetation plans.

Sea spurge (*Euphorbia paralias*)



TOP LEFT: © Tim Rudman, DPIPWE Tasmania, TOP RIGHT: © Tim Rudman, DPIPWE Tasmania, BOTTOM LEFT: © DPIPWE Tasmania, BOTTOM RIGHT: Source: ABARES Current distribution map based on distribution records from the Atlas of Living Australia and additional distribution records supplied by the state and territory WWG as required

Summary of detailed assessment

Invasiveness

Sea spurge is a weed of beaches and dunes, establishing in relatively undisturbed vegetation and forming dense monocultures, altering beach and dune shape and formation. Sea spurge outcompetes native species and is considered a transformer species. The primary vector for dispersal is the ocean, and seeds can float in sea water for several years. Following explosive opening of the three-valved fruits open, secondary dispersal of seeds by wind is likely when the seeds roll across the top of the sand. Seed and root fragments can dry out in coastal dunes and be spread along beaches following storm events. Seeds can also be dispersed by vehicles, beach grooming equipment and ballast water. Long distance dispersal can also occur with the transport of root fragments and seeds in contaminated sand or soil during earth moving works.

Current and potential distribution

Sea spurge is currently present in NSW, TAS, VIC, SA and WA, Broad climatic suitability modelling shows it has a potential to spread further in the coastal zone through these jurisdictions.

Beneficial uses

Although some may regard Sea spurge as a stabiliser for sand dunes, it has not been used intentionally for this purpose, and this use being strongly discouraged.

Current and potential negative impacts

Assessed as:

- Current medium impacts at a regional – multiregional level for environment^{4,5}.
- Current high impacts at a regional-multiregional (or medium impact at a multi-regional – national) level for environment³.
- Potential high impact at a regional – multi-regional level for environment^{3,5}.

³ Impacts on vegetation structure

⁴ Impacts on Australian biodiversity

⁵ Modification of ecosystem functions

Economic (market): Sea spurge has minimal documented economic impact due to its coastal dune and high-water mark habitat. Unlike other Euphorbia species, it is unlikely to become an agricultural weed. No evidence of it impacting product quality or market access.

Environmental: Sea spurge has negative environmental impacts within coastal dune systems and high-water mark zones. Sea spurge can outcompete native understory species such as Dune thistle (*Sonchus megalocarpus*) and Beach fescue (*Festuca littoralis*). There are also negative impacts to nesting sites for shorebirds like the Hooded plover (*Thinornis cucullatus*). Sea spurge can alter geomorphic processes on coastlines (changes dune shape, alters sand movement).

Social: Sea spurge produces a milky latex sap that can cause skin and eye irritation, with occasional local incidents reported. It may pose a risk to volunteers and land managers involved in its removal. Large infestations of sea spurge can reduce social amenity by altering and diminishing the natural beauty of coastal areas. it can negatively impact ecotourism by degrading habitats important for recreation and nature-based tourism (e.g. shorebird tours).

Cultural: Cultural impacts of Sea spurge are considered minor and there is no published evidence available. Sea spurge may impact coastal middens. Infestations in these areas may affect Indigenous cultural heritage and associated cultural values.

Proposed actions to improve management

Benefits of national plan/approach: Research actions could be done at state/regional level, however strong efficiencies to coordinating all actions via a national plan/approach. Efficient use of resources, raise profile, drive improvements in control.

Focus of national plan/approach: Reduce negative environmental, social and cultural impacts caused by sea spurge. The following potential management actions have been considered as part of the NEWP detailed assessment process and would be refined with stakeholders through the development of a national plan.

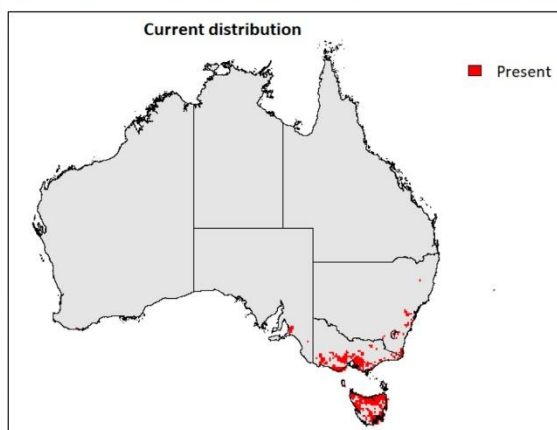
- 1) **On-ground management actions** – accelerating the national rollout and monitoring of the new biocontrol agent, ensuring supply, distribution, and long-term evaluation are coordinated across

all affected states; supporting research into integrated weed management (IWM) that combines biocontrol with mechanical, chemical, and habitat-based approaches, tailored to different coastal environments; improving chemical methods for use in sensitive coastal habitats.

- 2) **Research and development for the species** – enhancing surveillance and mapping capabilities through new remote sensing tools; improving detection via eDNA; establishing monitoring protocol for early detection and rapid response in areas at the invasion front of the weed leveraging remote sensing and citizen science platforms.
- 3) **Policy and regulation** – developing statewide or national policies or regulations to support local and regional community and land manager efforts; developing strategic, long-term containment, spread prevention, and impact reduction plans in nationally significant areas; formalising partnerships between states, local governments, NRM bodies, and community groups to share resources, coordinate training, and align priorities, especially for regions with limited capacity or high conservation value.
- 4) **Capacity building and awareness** – providing a unified platform for sharing best practices, consistent messaging, and up-to-date information; expanding citizen science and volunteer programs for detection, removal, and monitoring; developing training modules and recognition schemes etc.
- 5) **Asset protection** – developing regional and state plans to reduce spread/establishment or mitigate impact of sea spurge to nationally important assets; integrating coastal restoration with sea spurge management, for example after removal, prioritise revegetation with native dune species to stabilise sand, outcompete reinvasion, and restore habitat for shorebirds and other fauna.

Spanish heath (*Erica lusitanica*)

(Group nomination: includes the four species *Erica lusitanica*, *E. arborea*, *E. baccans* and *E. scoparia*.)



TOP LEFT: © Matthew Baker, Tasmanian Herbarium, TOP RIGHT: © Matthew Baker, Tasmanian Herbarium, BOTTOM LEFT: © Matthew Baker, Tasmanian Herbarium, BOTTOM RIGHT: Source: ABARES Current distribution map based on distribution records from the Atlas of Living Australia and additional distribution records supplied by the state and territory WWG as required

Summary of detailed assessment

Invasiveness

Spanish heath can establish in both undisturbed and disturbed habitats. It is an invader of a wide variety of vegetation types, including lowland grassland and woodland, dry sclerophyll forest and woodland, wet sclerophyll forest and riparian vegetation, heathlands, coastal environments, pastures and roadsides. It is a very competitive species that can completely dominate lower strata. It has been described as a transformer species. Seed dispersal by natural means is by water, wind, animals. Human mediated dispersal includes through vehicles/machinery and as a contaminant of produce and soil.

Current and potential distribution

Spanish heath is currently present in ACT, NSW, SA, TAS, VIC and WA. Broad climatic suitability modelling shows it has a potential to spread further through these jurisdictions and potential to establish in QLD.

Beneficial uses

Spanish heath has been reported as a soil stabiliser, but this use is limited in Australia.

Current and potential negative impacts

Assessed as:

- Current medium impacts at a regional – multi-regional level for environment^{4,5}.
- Potential high impact at a regional – multi-regional (or medium at multi-regional – national) level for environment^{3,4,5}.

³ Impacts on vegetation structure

⁴ Impacts on Australian biodiversity

⁵ Modification of ecosystem functions

Economic (market): Spanish heath has minimal impact on highly productive farmland but can reduce yield and pasture productivity in marginal or poorly managed areas by forming dense, unpalatable stands that outcompete desirable species. Management is difficult and costly, with high expenses for eradication, hygiene, and ongoing control, particularly for land managers, quarries, and public authorities. Spanish heath has no recorded impacts on product quality, market access, or certification schemes. However, its spread through contaminated machinery and quarry materials poses potential reputational and financial costs. Increased reliance on herbicides may affect future certification and market access.

Environmental: Spanish heath has the potential for environmental impacts across southeastern Australia, particularly in high-rainfall regions such as TAS, VIC, parts of NSW, and the ACT. It can form monocultures, capable of dominating the shrub canopy of invaded habitats, that suppress native plant regeneration. It is a species that can invade disturbed habitats but may also establish in intact native vegetation. It is also known to be allelopathic. It could cause serious impacts to biodiversity in NSW, including important habitats such as the Greater Blue Mountains World Heritage Area, including its 100 threatened plant species (e.g. the critically endangered Wollemi pine (*Wollemia nobilis*)). In TAS, it has the potential to actively invade and expand in the TAS Wilderness World Heritage Areas and adjacent areas. Increased biomass may increase fire risk and may change fire regimes. Heaths (*Erica* spp.) are well adapted to fire and will quickly regenerate.

Social: Spanish heath has no direct impacts to human physical health, but it may cause indirect impacts to mental health. It is difficult to control, and this places financial strain on farmers and other land managers. Spanish heath may reduce the aesthetic and recreational value of natural landscapes, diminishes community enjoyment of bushland reserves and national parks. Dense infestations detract from iconic natural areas, including Hobart's bushland reserves and the Tasman National Park, impacting tourism and access.

Cultural: There is no direct evidence of impacts on cultural practices, knowledge, oral traditions, or subsistence resources. However, by invading conservation, riparian, and culturally significant areas, Spanish heath can disrupt biodiversity, displace native vegetation, and may affect traditional food sources. Its spread also poses a risk to place-based cultural heritage, potentially degrading landscapes with cultural, spiritual, and historical significance. Impacts are likely to increase if the species continues to expand.

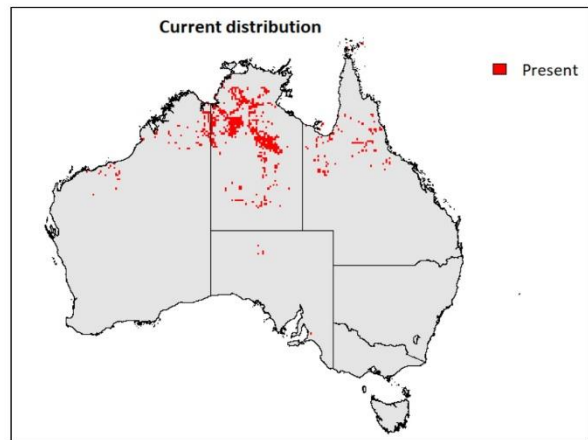
Proposed actions to improve management

Benefits of national plan/approach: Research actions could be done at state/regional level, however strong efficiencies to coordinating all actions via a national plan/approach. Efficient use of resources, raise profile, drive improvements in control.

Focus of national plan/approach: Prevent further spread of Spanish heath and reduce its negative environmental and production impacts. The following potential management actions have been considered as part of the NEWP detailed assessment process, and would be refined with stakeholders through the development of a national plan.

- 1) **On-ground management actions** – investigating further herbicide options particularly for sensitive environments (studies/innovation); testing of new herbicide actives and/or applications; investigating habitat manipulation options.
- 2) **Research and development for the species** – advancing exploratory biocontrol research; advancing foundational research on the ecology/biology of the species; improving identification materials; implementing targeted surveillance to fill information gaps; developing spread prevention and containment opportunities outside of core areas (e.g. NSW, VIC, SA and some parts of TAS).
- 3) **Policy and regulation** – harmonising legislation and policy (i.e. nationally consistent ban from sale/trade; spread prevention zones, movement restrictions); working with industry to improve management guidelines (e.g., 'grow me instead'); developing early containment protocols and targeted industry management guidelines and policy.
- 4) **Capacity building and awareness** – developing or improving identification, communication and awareness materials; developing national best practice management guidelines and tools; coordinating proactive sharing of information and tools; establishing Communities of Practice.
- 5) **Asset protection** – identifying assets at risk and prioritising them for spread prevention and impact reduction; developing strategic plans and tools to proactively protect priority assets and minimise spread and establishment of heaths (i.e. detect at early stage of invasions); leveraging co-investment to implement plans.

Calotrope (Rubber bush) (*Calotropis procera*)



TOP LEFT: © Northern Territory Government of Australia, TOP RIGHT: © The State of Queensland, BOTTOM LEFT: © The State of Queensland, BOTTOM RIGHT: Source: ABARES Current distribution map based on distribution records from the Atlas of Living Australia and additional distribution records supplied by the state and territory WWG as required

Summary of detailed assessment

Invasiveness

Calotrope grows in sunny to shady habitats such as disturbed and overgrazed land, rangeland, roadsides, river flats and coastal dunes, red earth plains and heavy soil plains, ephemeral watercourses and run-on areas. It is invasive, deep rooted, highly adaptable and allelopathic. It resprouts from roots allowing it to produce new clonal plants and persist vegetatively after suckering giving it a competitive advantage. It is a prolific seed producer however seed persistence is less than two years. Dispersal is by water, wind, animals and contaminated produce (hay and packaging).

Current and potential distribution

Calotrope is currently present in NT, QLD, SA and WA, with broad climatic suitability modelling showing it has the potential to establish in NSW.

Beneficial uses

Calotrope may sometimes be consumed by cattle in dry years when other food sources are scarce, however it is not managed in any land use for this purpose.

Current and potential negative impacts

Assessed as:

- Current high impacts at a regional – multiregional (or medium at a multi-regional – national level) level for economic (market)¹ and environment³.
- Potential high impact at a regional – multi-regional (or medium impact at multi-regional – national) level for economic (market)¹ and environment^{3,4}.

¹ Impacts on yields and management inputs

³ Impacts on vegetation structure

⁴ Impacts on Australian biodiversity

Economic (market): Calotrope invades both grazed and ungrazed pastures, reducing rangeland productivity and hindering mustering. Its sap is toxic, however there is conflicting reports on the toxicity to stock and livestock responses vary by region. Dense infestations can reduce access to grazing and water. Calotrope requires investment in control including herbicide application, mechanical removal, and potentially biological control agents. No conclusive data on impacts on product quality or market access has been identified in the literature.

Environmental: Calotrope may alter vegetation structure by forming dense thickets, particularly in disturbed or overgrazed areas, drainage lines and floodplains. These thickets may outcompete native grasses, reduce ground cover diversity, and introduce a shrub layer into open savanna systems. As the species is an invader of degraded or naturally species-poor areas with low competition, there is limited direct evidence on its effects on species richness in Australia. Further research is needed to confirm biodiversity impacts. Its dense thickets in drainage lines and riparian areas may affect hydrological flows, influence soil properties and nutrient cycling, particularly in degraded or overgrazed areas. Allelopathic effects could inhibit native plant regeneration following disturbance.

Social: There is limited evidence of significant social impact. Calotrope may be harmful if deliberately ingested, and milky sap may cause skin and eye irritation. It may reduce social amenity by restricting access to recreational areas, walking trails, and riparian zones, as well as reducing aesthetic value.

Cultural: Traditional Custodian groups have identified Calotrope as a concern in several Healthy Country and Joint Management Plans. Dense thickets may obscure culturally significant sites, impede access to areas used for ritual and healing, and alter landscapes central to songlines, ceremonies, and traditional knowledge systems. Its toxic sap poses risks during cultural activities, and its presence may reduce fuel availability for right-way fire practices. Its spread across the Indigenous Estate, particularly in desert landscapes and Indigenous Protected Areas, poses a risk to the integrity of place-based heritage.

Proposed actions to improve management

Benefits of national plan/approach: Actions 1 & 2 could be done at state/regional level. There are strong efficiencies to coordinating actions via national plan/approach for actions 3-5 that would deliver benefits to graziers, and those working to manage Rubber bush to protect Country, environmental assets, rehabilitation sites and community infrastructure.

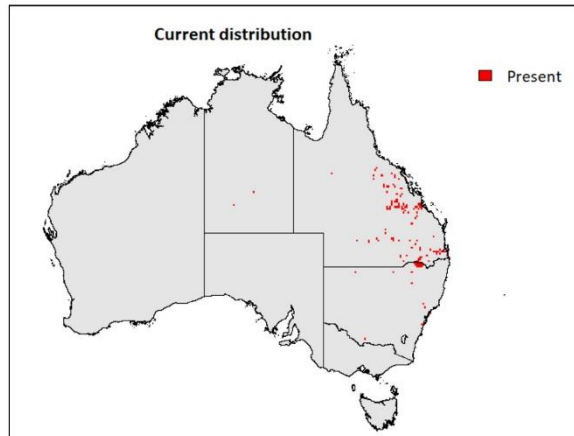
Focus of national plan/approach: Prevent further spread (to avoid costs) and reduce current negative impacts of this species on affected agricultural land, parks and reserves and Indigenous

managed lands. The following potential management actions have been considered as part of the NEWP detailed assessment process, and would be refined with stakeholders through the development of a national plan:

- 1) **On-ground management actions** – establishing trials and demonstration sites for integrated control strategies, including optimising chemical control (herbicide selection, timing, and application methods), mechanical removal, and habitat manipulation (e.g., targeted grazing or fire regimes where appropriate); sharing outcomes nationally to support adaptive management; promoting and supporting restoration of native vegetation following Calotrope removal to reduce reinvasion risk and restore ecosystem function (i.e., reseeding, planting, or assisted natural regeneration, tailored to local conditions).
- 2) **Research and development for the species** – undertaking research to better understand the socio-economic and cultural impacts of Calotrope, particularly in pastoral and Indigenous communities, to better understand the impacts, particularly in a grazing setting, and to inform prioritisation and tailor management responses; developing better ID resources; improving surveillance capacity and better mapping of infestation locations. No new biocontrol agents are currently available.
- 3) **Policy and regulation** – harmonising legislation across jurisdictions; improving existing industry and government guidelines/policy plans; identifying and managing key pathways for Calotrope spread (e.g., movement of contaminated soil, vehicles, livestock); implementing hygiene protocols and awareness campaigns for industries and communities operating in infested or high-risk areas.
- 4) **Capacity building and awareness** – developing targeted outreach and training for landholders, Indigenous ranger groups, and local councils in affected regions, focusing on early detection, reporting, and best-practice management, knowledge exchange between regions etc.
- 5) **Asset protection** – identifying any assets at risk.

Harrisia (*Harrisia martinii*)

(Group nomination: includes the three species *H. martinii*, *H. pomanensis* (syn. *H. regelii*) and *H. tortuosa*)



TOP LEFT: © The State of Queensland, TOP RIGHT: © The State of Queensland, BOTTOM LEFT: © The State of Queensland, BOTTOM RIGHT: Source: ABARES Current distribution map based on distribution records from the Atlas of Living Australia and additional distribution records supplied by the state and territory WWG as required

Summary of detailed assessment

Invasiveness

Harrisia can invade a variety of habitats including acacia woodlands, grasslands, brigalow forest, semi-arid shrublands, box and ironbark woodland and pine forests. It can form dense mats and outcompete grass and native woodland plants. It is a prolific seed producer and spreads vegetatively through stem fragments. The seedbank of Harrisia persists for 5-7 years. Dispersal is by water and animals. It also spreads in garden waste and stem fragments can be dispersed by vehicles.

Current and potential distribution

Harrisia is currently present in NSW, NT and QLD. Broad climatic suitability modelling shows it has a potential to establish in SA.

Beneficial uses

There are known benefits of Harrisia. It was introduced as an ornamental plant and for edible fruit but no longer (or not widely) valued for these traits.

Current and potential negative impacts

Assessed as:

- Current high impacts at a regional – multi-regional (or medium at a multi-regional – national) level for economic (market)¹, environment^{3,4} and social^{6,7}.
- Potential high impact at a regional – multi-regional (or medium at multi-regional – national) level for economic (market)^{1,2}, environment^{3,4,5}, social^{6,7} and cultural⁸.

¹ Impacts on yields and management inputs

² Impacts on quality of products

³ Impacts on vegetation structure

⁴ Impacts on Australian biodiversity

⁵ Modification of ecosystem functions

⁶ Impacts on human health

⁷ Impacts on social amenity

⁸ Impacts on oral tradition, practice, ritual and knowledge

Economic (market): *Harrisia* impacts the grazing industry. It can form dense, impenetrable thickets that outcompete native pasture species, degrade and reduce productivity of grazing land, and obstruct livestock movement, mustering, and access to water sources. Its sharp spines can cause painful injuries to livestock and working dogs. The injuries to livestock can lead to abscesses which downgrade meat quality and can render wool and hides unsuitable for market. *Harrisia* shows moderate resistance to herbicides, which increases control costs. Producers with major infestations report spending significant amounts annually on herbicide control.

Environmental: *Harrisia* can form dense, tangled mats that can cover up to 80–90% of the ground cover. These infestations also can climb several metres into supporting vegetation, creating monocultures that outcompete native vegetation. Thickets may disrupt vegetation structure, reduce species richness, and hinder regeneration. It has impacts to Australian biodiversity, including in threatened ecological communities of the Brigalow acacia woodlands and rangelands in QLD. Its sharp spines can injure or kill native fauna and create physical barriers to movement. The thickets provide shelter for feral animals like rabbits. There is no direct evidence of *Harrisia* altering ecosystem functions, however, its dense mats can impede water flow in waterways.

Social: *Harrisia* has sharp spines that have caused injuries to graziers, and farm workers, with documented cases requiring hospitalisation and surgery. As the weed spreads into high-value conservation zones like Nairana National Park and Lockyer National Park in QLD, its impact on human health may increase, not just from injuries but from the impact on communities connected to the invaded areas. Mental health impacts as a result of stock injury/death and subsequent financial impact are possible. Dense infestations can also reduce public amenity in parks and reserves, restricting access and diminishing the recreational value of natural areas.

Cultural: There is no published evidence of direct cultural impacts of *Harrisia*. However, by analogy with other invasive cacti, its dense thickets and associated loss of native flora and fauna may disrupt cultural landscapes, including totem species. Its invasion of grasslands and acacia woodlands may reduce the availability of traditional foods, medicines, water, and craft resources. Dense thickets may restrict access to significant sites, like Brigalow Country.

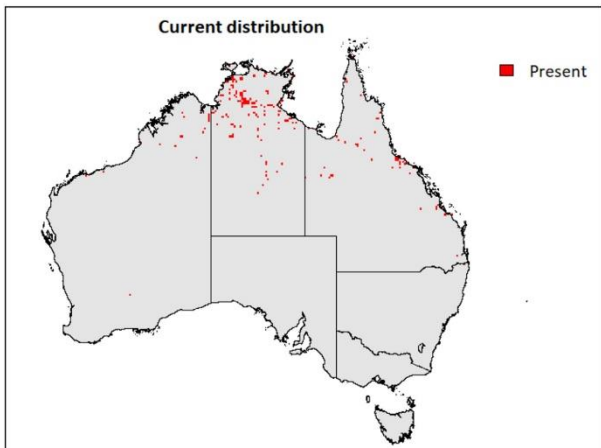
Proposed actions to improve management

Benefits of national plan/approach: Some actions could be done independently or coordinated between NSW/QLD, however there are strong efficiencies to coordinating actions, such as research, via a national approach. Note potential impacts are much wider, thus a national approach to containment of spread would be beneficial.

Focus of national plan/approach: Prevent further spread and reduce the negative impact of *Harrisia* on economic (market), environmental, social and cultural domains. The following potential management actions have been considered as part of the NEWP detailed assessment process, and would be refined with stakeholders through the development of a national plan:

- 1) **On-ground management actions** – testing new herbicides to reduce costs; improving mechanical control; developing integrated management approaches (with better quality trials of existing and novel tools).
- 2) **Research and development for the species** – addressing potential gaps in distribution and outlier data; advancing biology and ecology knowledge; implementing exploratory biocontrol research; investigating dispersal pathways; improving detection; coordinating and sharing this work across jurisdictions.
- 3) **Policy and regulation** – harmonising legislation and policy (i.e. nationally consistent ban from sale/trade); establishing spread prevention zones; developing grazing industry guidelines and more government policy in collaboration with grazing industry; supporting local eradication programs.
- 4) **Capacity building and awareness** – developing and disseminating more information for the grazing industry, conservation managers and other landowners; developing community groups and community of practice; providing further training opportunities.
- 5) **Asset protection** - identifying priority areas for asset protection; implementing actions in existing plans and strategies to protect natural values identified; supporting future actions on any new priority sites identified.

Neem tree (*Azadirachta indica*)



TOP LEFT: © The State of Queensland, TOP RIGHT: © Northern Territory Government of Australia, BOTTOM LEFT: © Northern Territory Government of Australia, BOTTOM RIGHT: Source: ABARES 2025 Current distribution map based on distribution records from the Atlas of Living Australia and additional distribution records supplied by the state and territory WWG as required

Summary of detailed assessment

Invasiveness

Neem tree invades intact natural areas, outcompetes native plants such as causing eucalypts to decline and prevents regeneration. Neem tree is allelopathic and it strongly inhibits germination and growth of several crops and weeds. It is a prolific seed producer however seeds are only viable for a short period (limited to a few months). Seeds are dispersed by wild vertebrates, including birds, bats and pigs. Water movement is an effective dispersal vector for Neem seeds particularly along water courses. It can be deliberately spread by people as it is grown as a plantation tree and accidentally in garden waste.

Current and potential distribution

Neem tree is currently present in NT, QLD and WA. Broad climatic suitability modelling shows it has a potential to establish in NSW.

Beneficial uses

The agricultural industry has commercial interests for Neem tree due to its agricultural and medicinal benefits. Commercial plantations of neem tree were cultivated in the 1980's, but the economic benefits of these plantations are unclear. The species is also planted as a shade tree in QLD and NT.

Current and potential negative impacts

Assessed as:

- Current high impacts at a regional – multiregional (or medium impact at multi-regional – national) level for economic (market)¹.
- Current high impact at multiregional level for environment^{3,4,5}.
- Potential high impact at a multiregional-national level for economic (market)¹, environment^{3,4} and culture⁸.
- Potential high impact at a national level for environment⁵.

¹ Impacts on yields and management inputs

³ Impacts on vegetation structure

⁴ Impacts on Australian biodiversity

⁵ Modification of ecosystem functions

⁸ Impacts on oral tradition, practice, ritual and knowledge

Economic (market): Neem tree may have an impact on land management. It has been reported to interfere with farming in parts of QLD and internationally in regions like Ghana, where it colonises fallow land and reduces availability for cultivation. Due to its competitive nature, as well as being allelopathic, Neem tree may inhibit growth and outcompete desired plants such as pasture and crops. Control of Neem tree is labour-intensive and costly, particularly in coastal and peri-urban areas. There is no evidence to suggest it is impacting quality of products or market access.

Environmental: Neem may displace native canopy trees and form dense thickets, particularly along waterways, suppressing native flora and altering ecosystem structure. It can impact biodiversity in riparian zones and woodlands by reducing native plant diversity and competing aggressively with native species. Its insecticidal compounds can leach into waterways, affecting freshwater species (fish and tadpoles), while impacts on native insects may disrupt food chains. These effects are pronounced in sensitive ecosystems such as the Dampier Peninsula Monsoon vine thickets. Neem tree may also alter ecosystem functions through high water use and leaf litter that affects soil pH and nutrient cycling.

Social: Neem tree has impacts on human health and social amenity. Neem oil is noted as toxic to humans. Mental health effects may arise from associated economic and environmental consequences, which may increase if its range and impacts expand. Social amenity is negatively affected, with the Kimberley Management Plan reporting 30 of 93 respondents rating impacts as medium to very high. Large infestations can restrict access, amenity while loss of diversity and monoculture overgrowth further reduce community amenity.

Cultural: Neem tree can impact on First Nations oral tradition, practice, ritual, and cultural heritage. The Kimberley Management Plan notes that impacts on Aboriginal cultural sites are not well studied, but impenetrable thickets may restrict access to riparian zones and alter plant and animal

communities of cultural value. Monsoon vine thickets of the Dampier Peninsula, important for camping, ceremony, and law grounds, are under growing threat from Neem tree. In the Fitzroy River floodplain, Neem threatens traditional trading and ceremony grounds and a spiritual healing site. Its spread may disrupt traditional food, medicine, and cultural practices by displacing culturally significant native plants. The Kimberley report records unfavourable views (e.g. displacement of bush fruits in vine thickets) as well as favourable ones (e.g. shade for communities, fishing spots, and waterholes).

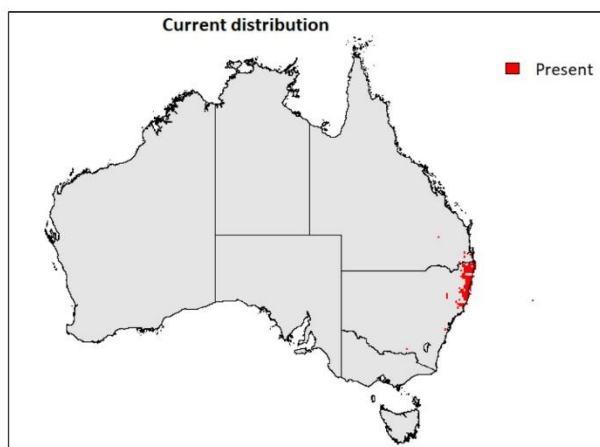
Proposed actions to improve management

Benefits of national plan/approach: Some actions could be done without national coordination e.g. improving chemicals. Potential to achieve efficiencies through avoided duplication and efficient use of available resources.

Focus of national plan/approach: Collaborate to prevent further spread, improve control methods and support active management. The following potential management actions have been considered as part of the NEWP detailed assessment process, and would be refined with stakeholders through the development of a national plan:

- 1) **On-ground management actions** – improving chemical application methods and exploring new chemical options; exploring habitat manipulation approaches (use of fire and competition).
- 2) **Research and development for the species** – enhancing surveillance tools/methods; improving mapping (remote sensing); advancing further research into the species' biology and ecology; implementing exploratory biocontrol research (investigating feasibility of potential biocontrol agents with careful consideration of Neem tree's beneficial uses).
- 3) **Policy and regulation** – harmonising legislative approaches; improving policy, strategies and guidelines to prevent further spread.
- 4) **Capacity building and awareness** – developing more awareness and education resources.
- 5) **Asset protection** – conducting a risk assessment to clarify which assets are most at risk, followed by prioritisation of assets for protection.

Tropical soda apple (*Solanum viarum*)



TOP LEFT: © The State of Queensland, TOP RIGHT: © The State of Queensland, BOTTOM LEFT: © The State of Queensland, BOTTOM RIGHT: Source: ABARES Current distribution map based on distribution records from the Atlas of Living Australia and additional distribution records supplied by the state and territory WWG as required

Summary of detailed assessment

Invasiveness

Tropical soda apple can establish in relatively undisturbed habitats, forming large and dense infestations. It invades pastures, forests, riparian zones, roadsides, recreational areas, horticultural and cropping areas, and citrus and sugarcane fields. It can form a monoculture. Tropical soda apple is a prolific seed producer and can regenerate from the shallow root system and crown. Dispersal by water, wild vertebrates, livestock and accidentally by human means (vehicles, machinery, contaminated fodder and soil).

Current and potential distribution

Tropical soda apple is currently present in NSW and QLD. Broad climatic suitability modelling shows it has a potential to establish in VIC.

Beneficial uses

There are no known benefits of Tropical soda apple.

Current and potential negative impacts

Assessed as:

- Current medium – high impacts at a regional – multiregional level for economic (market)¹, environment^{3,4,5} and social⁶.
- Potential high impact at a national level for economic (market)¹, environment^{3,4,5}, social^{6,7} and culture^{8,9,10}.

¹ Impacts on yields and management inputs

³ Impacts on vegetation structure

⁴ Impacts on Australian biodiversity

⁵ Modification of ecosystem functions

⁶ Impacts on human health

⁷ Impacts on social amenity

⁸ Impacts on oral tradition, practice, ritual and knowledge

⁹ Impacts on subsistence, sustenance and craftsmanship resources

¹⁰ Impacts on heritage (place based)

Economic (market): Tropical soda apple is causing economic impacts for land managers in northern NSW; it is a major and growing problem in the Kempsey region over the past five years. Tropical soda apple reduces pasture productivity and carrying capacity, with sharp permanent prickles up to 12 mm that can injure animals and restrict access to shade and water. Its leaves are unpalatable to stock reducing carrying capacity and while not generally toxic, it has been known to poison goats that consume whole plants. The weed hosts crop pests and diseases including several insect pests, fungi and viruses affecting fruits and vegetables. Management is costly and labour-intensive, requiring strict hygiene measures such as cleaning trailers, monitoring fodder and manure, and collecting all seed and fruit before spraying as spraying alone is insufficient to kill seeds inside the fruits, and holding stock in clean paddocks before transfer.

Environmental: Tropical soda apple was assessed for the potential to have a high impact in the future. Tropical soda apple is a prickly shrub (1–2 m) that forms dense thickets (or monocultures) in open areas, bushland and riparian zones. It may outcompete and displace native plants and disrupt ecological processes. Its dense thickets may prevent animal movement. Tropical soda apple readily invades disturbed sites and riparian zones, spreads easily via floods, and bushfire may stimulate seed germination.

Social: Tropical soda apple was assessed for the potential to have high impact in the future. It may impact human health (physical and mental) and social amenity. Its fruit contains toxic compounds that can cause poisoning if consumed in large quantities, while its sharp prickles can cause injuries and create barriers that restrict access to shade, water, and land. The high cost and difficulty of ongoing control may place financial and emotional strain on landholders, contributing to stress, anxiety, and reduced mental well-being. Dense infestations can also invade recreational areas, reducing their use and amenity. By displacing native vegetation and reducing biodiversity, Tropical soda apple may further diminish the aesthetic and recreational value of natural areas.

Cultural: Tropical soda apple was assessed to have potential for high impacts in the future. Its dense, thorny thickets may restrict movement and access to waterways, sacred sites, and culturally significant areas, hindering ceremonies, storytelling, and other practices. There is a potential to

restrict access which would affect hunting and gathering. If Tropical soda apple alters habitats and limits resource availability, Tropical soda apple may undermine traditional ecological knowledge, affects the ability of elders to pass down cultural knowledge, and weakens connections to country that are central to cultural identity and spirituality. Tropical soda apple may impact First Nations cultural heritage by displacing native plants vital for bush tucker, medicine, and traditional materials, reducing biodiversity and disrupting ecosystems relied upon for cultural practices.

Proposed actions to improve management

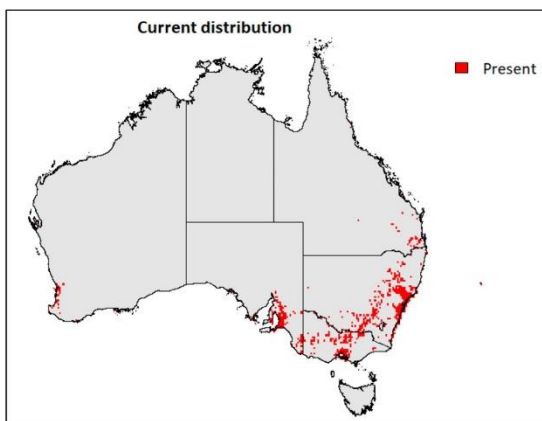
Benefits of national plan/approach: Some actions could be done at state/regional level, however there are likely efficiencies to coordinating actions via national plan/approach (e.g. efficient use of resources, clearly signalling need for action/s).

Focus of national plan/approach: Prevent further spread and improve control techniques to reduce agricultural impacts caused by this species. The following potential management actions have been considered as part of the NEWP detailed assessment process, and would be refined with stakeholders through the development of a national plan:

- 1) **On-ground management actions** – improving chemical and mechanical control options; conducting coordinated chemical, mechanical trials across jurisdictions.
- 2) **Research and development for the species** – advancing further research on dispersal; exploring a potential biocontrol agent (e.g., there is an agent released in USA); improving mapping with remote sensing, particularly in complex or diverse habitats; developing reliable distribution maps; pooling of resources to fill knowledge gaps particularly in biology and ecology.
- 3) **Policy and regulation** – harmonising legislation and policy; developing industry guidelines and policy; strengthening containment and movement controls in other states and territories.
- 4) **Capacity building and awareness** – developing further information on communication and awareness material; establishing community groups or communities of practice; supporting skills development and training.
- 5) **Asset protection** – protecting priority asset/sites at risk.

Wilding olive (*Olea europaea*)

(Group nomination: includes the two subspecies *Olea europaea* subsp. *europaea* and *O. europaea* subsp. *cuspidata*.)



TOP LEFT: © John Hosking, State of New South Wales, TOP RIGHT: © John Hosking, State of New South Wales, BOTTOM LEFT: © John Hosking, State of New South Wales, BOTTOM RIGHT: Source: ABARES Current distribution map based on distribution records from the Atlas of Living Australia and additional distribution records supplied by the state and territory WWG as required

Summary of detailed assessment

Invasiveness

Wilding olive invades native vegetation including woodlands, coastal vegetation and riparian areas. Wilding olive forms dense canopies displacing native plants and both subspecies can form monocultures, dominating invaded habitat. Wilding olive seeds are dispersed by wild vertebrates (birds and foxes) and deliberately and accidentally by people. Given its ornamental status, likely to be occasionally spread in garden waste.

Current and potential distribution

Wilding olive is currently present in ACT, NSW, QLD, SA, VIC and WA, with broad climatic suitability modelling indicating it has the potential to establish in TAS.

Beneficial uses

Olive is a beneficial species to the commercial olive industry and backyard olive growers. The nomination notes a total of 33,595 ha planted across southern Australia and an industry estimated to be worth over \$210 million in 2016 (The Olive Centre). Olive is grown on agricultural land and in

urban and peri urban gardens in areas of suitable climate. Many Australian individuals grow olives personally for food and cultural reasons. Olive wood burns slow and produces a hot heat and is valued for pizza ovens and heating.

Current and potential negative impacts

Assessed as:

- Current high impacts at a regional – multi-regional (or medium impact at multi-regional national level) for environment^{3,4,5}.
- Potential high impact at a multi-regional to national level for environment^{3,4,5}.

³ Impacts on vegetation structure

⁴ Impacts on Australian biodiversity

⁵ Modification of ecosystem functions

Economic (market): Wilding olive may reduce pasture availability by outcompeting pasture species. This reduces feed availability for livestock. Their leaves, though palatable, have low digestibility. It can host diseases and pests that may affect commercial olive groves, and its dense growth can facilitate understory weeds. Control measures are labour-intensive and costly due to the resprouting ability and persistent seed bank. Wilding olive has minimal documented impacts on agricultural product quality or market access in Australia.

Environmental: Wilding olive can form a dense canopy that may suppress understorey growth, reducing native plant germination and establishment. Wilding olive can displace native shrubs, grasses, and hollow-forming trees, which in turn can reduce habitat and food sources for native fauna. They may also alter fire regimes and introducing volatile compounds through leaf litter. This can increase fire frequency and severity. Wilding olive may reduce native species richness by up to 50%, and in South Australia is an identified threat to 10 endangered species, including the Grey Box Grassy Woodlands ecological community. Wilding olive can alter nutrient cycling, and soil moisture availability.

Social: Olive pollen is an allergen known to increase the risk of hay fever, conjunctivitis and asthma in susceptible individuals during spring and summer. The fruit is not poisonous to humans but can cause mild skin irritations and allergic reactions in some circumstances, though Wilding olive is not routinely harvested. Wilding olive may degrade the visual and recreational appeal of natural landscapes by replacing native vegetation. Their spread along roadsides, fences, and utility corridors affects access to public spaces.

Cultural: There is no published evidence of direct cultural impacts from Wilding olive. However, its effects on native species, fire regimes, and landscape composition may reduce resource availability, alter cultural landmarks, and limit access to species important for food, hunting, and gathering. These changes could indirectly affect connection to Country and knowledge transfer.

Proposed actions to improve management

Benefits of national plan/approach: A national strategic approach could enhance coordination, consistency and effectiveness in managing Wilding olive. It would support the integration of on-ground control methods, research, policy alignment, stakeholder collaboration and integrated

restoration. A cross-sectoral working group and a strategic plan would help unify efforts across jurisdictions and industry and community sectors.

Focus of national plan/approach: Reducing negative impacts of Wilding olive (feral/wilding/unmanaged olive trees) on environmental assets and affected industries (olive, forestry, graziers) and infrastructure (catchment management, councils). This excludes cultivated olive groves that are maintained and harvested. The following potential management actions have been considered as part of the NEWP detailed assessment process, and would be refined with stakeholders through the development of a national plan:

- 1) **On-ground management actions** – advancing further innovation of chemical, mechanical methods; integrating fire and chemical control to reduce costs; establishing demonstration sites for best-practice integrated weed management (IWM); sharing outcomes nationally.
- 2) **Research and development for the species** – improving detection using eDNA, AI images; expanding coordinated surveillance and mapping using remote sensing; filling knowledge gaps that exist around fire response and management; prioritising control areas and monitoring spread dynamics.
- 3) **Policy and regulation** – need for government – industry interaction to develop government and industry guidelines/policy; coordinating and sharing policy/guidelines and information across jurisdictions to promote consistency; supporting local/regional eradication programs, movement controls and containment.
- 4) **Capacity building and awareness** – raising awareness across government, industry and the community about Wilding olive; supporting citizen science platforms etc. to improve early detection; promoting work of community groups; supporting further training and skill development; sharing information developed across impacted jurisdictions.
- 5) **Asset protection** – removing Wilding olives in high priority areas; integrating restoration after control, (i.e., after removal, actively restore native vegetation to reduce reinvasion risk and support ecosystem recovery. This could include reseeding, planting, or assisted natural regeneration).

Ox-eye daisy (*Leucanthemum vulgare*)



TOP LEFT: © Sheldon Navie, TOP RIGHT: © Sheldon Navie, BOTTOM LEFT: © State of New South Wales, BOTTOM RIGHT: Source: ABARES Current distribution map based on distribution records from the Atlas of Living Australia and additional distribution records supplied by the state and territory WWG as required

Summary of detailed assessment

Invasiveness

Ox-eye daisy invades a variety of land-uses, including nature conservation areas, such as alpine and sub-alpine woodlands and grasslands, pastures (both modified and native), plantations, forestry areas and roadsides. It can form dense stands that outcompete native flora and reduce species richness. Aggressive spread following disturbance (e.g. fire); perennial rhizomes, high rates of seed production and long-lived soil seedbanks make it a highly competitive, persistent species. Seed dispersal occurs via water, animals, vehicles, machinery.

Current and potential distribution

Ox-eye daisy is currently present in ACT, NSW, SA, TAS and VIC, with broad climatic suitability modelling indicating it has the potential to establish in WA.

Beneficial uses

Ox-eye daisy is beneficial to the nursery/garden industry as a cottage garden type ornamental. It was more popular in the past and still available for sale on-line. It is not managed in any specific land use for its beneficial use.

Current and potential negative impacts

Assessed as:

- Current medium impacts at a regional level for environment^{3,4,5}.
- Potential medium impact at a regional- multi-regional level for environment^{3,4,5}.

³ Impacts on vegetation structure

⁴ Impacts on Australian biodiversity

⁵ Modification of ecosystem functions

Economic (market): Ox-eye daisy can invade pastures, replace desirable pasture species and reduce carrying capacity. It is generally avoided by livestock, but when consumed by dairy cattle, it can taint milk. Overseas, Ox-eye daisy is a significant contaminant in certified seed crops, however it is not known to affect product quality, market access or trade in Australia.

Environmental: Ox-eye daisy can form monocultures in grasslands, open woodlands, riparian areas, and roadsides, which may displace diverse native ground cover and limit recruitment of canopy species in some habitats. Its impacts are largely confined to ground strata, with little effect on vertical vegetation structure beyond its herbaceous growth (up to 1 m). In Kosciuszko National Park, long-term studies show reduced plant diversity in invaded plots, especially following disturbance like fire. Soil erosion may increase when the plant dies back seasonally, leaving bare ground. Overseas research suggests Ox-eye daisy can alter soil nutrient cycling.

Social: Ox-eye daisy can cause minor allergic reactions. It may affect aesthetics and use of alpine and sub-alpine areas for recreational activities. Its spread in Kosciuszko National Park has visibly altered the landscape, diminishing the aesthetic appeal and recreational experience for visitors.

Cultural: Ox-eye daisy has limited published cultural impact in Australia. Given the well-known, published environmental impact, infestations may affect use of alpine and sub-alpine areas for cultural activities.

Proposed actions to improve management

Benefits of national plan/approach: Research actions could be done at state/regional level, however strong efficiencies to coordinating all actions via a national plan/approach. Efficient use of resources, raise profile, drive improvements in control.

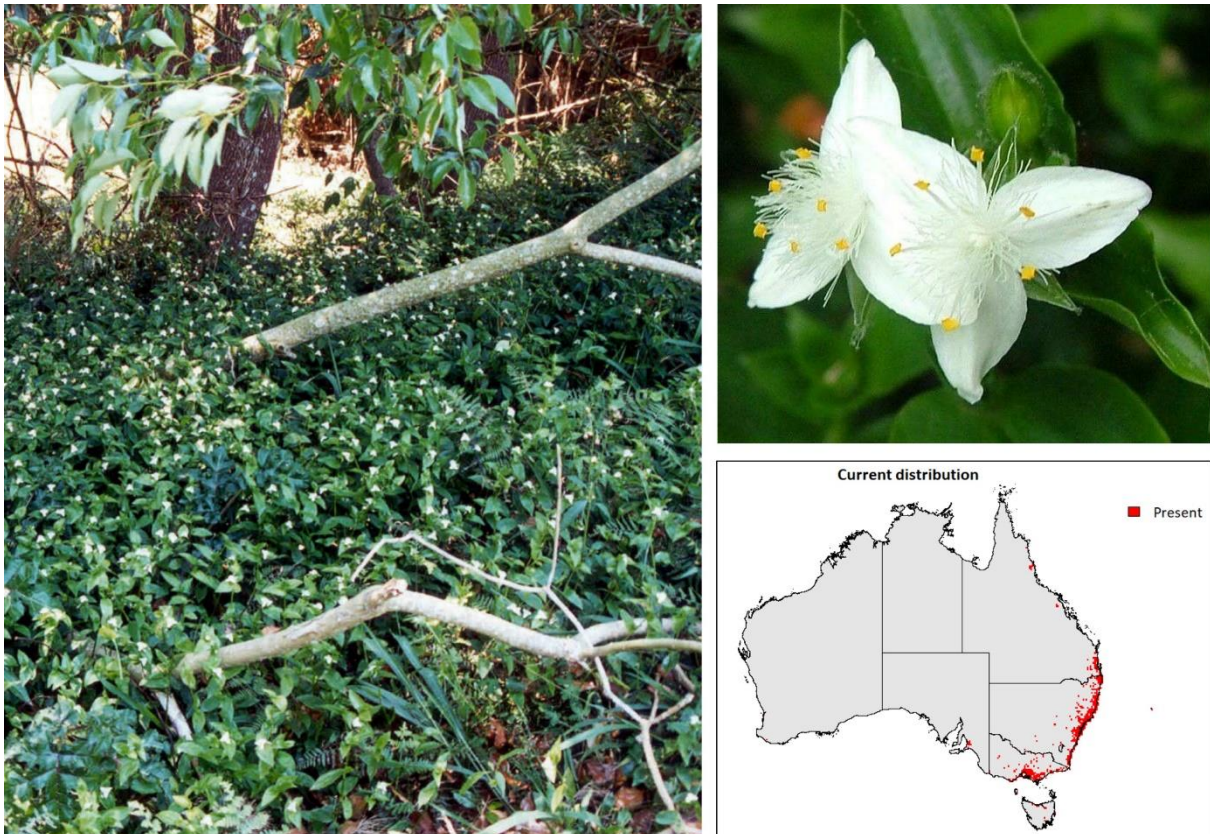
Focus of national plan/approach: Preventing further spread, particularly preventing spread from roadside infestations into production and conservation land and improving control tools and efficacy to reduce negative impacts on important environmental assets (such as such as EPBC Act listed flora and World Heritage areas in NSW and TAS). The following potential management actions have been considered as part of the NEWP detailed assessment process, and would be refined with stakeholders through the development of a national plan:

- 1) **On-ground management actions** – advancing future research for herbicide trials, habitat manipulation; sharing knowledge (restoration strategies, risk mitigation).
- 2) **Research and development for the species** – coordinating investment for research on biology and ecology; implementing exploratory biocontrol research to develop a biocontrol agent;

improving remote sensing capacity; improving national mapping to identify core areas; establishing key containment zones to prevent further spread.

- 3) **Policy and regulation** – harmonising legislation and policy (i.e. nationally-consistent ban from sale/trade, spread prevention zones); expanding and sharing information; developing industry guidelines; implementing cross-border coordination with state declarations, movement restrictions and early containment protocols.
- 4) **Capacity building and awareness** – developing further communication materials; consolidating and standardising information; building a formal community of practice; streamlining training at a national level.
- 5) **Asset protection** – prioritising assets for protection; implementing coordinated programs across threatened sites; sharing resources.

Wandering trad (*Tradescantia fluminensis*)



LEFT: © The State of Queensland, TOP RIGHT: © Sheldon Navie, BOTTOM RIGHT: Source: ABARES Current distribution map based on distribution records from the Atlas of Living Australia and additional distribution records supplied by the state and territory WWG as required

Summary of detailed assessment

Invasiveness

Wandering trad can establish in relatively undisturbed vegetation and has a superior ability to establish, forming large and dense infestations. It is known to be a transformer species and can kill mature rainforest trees in dense stands. It does not produce viable seed in Australia. It reproduces vegetatively (stem fragments). Stem fragments that contain a node can readily develop into a new plant. Stem fragments can survive for 1 year without roots or contact with the soil. Stem fragments are dispersed by water, animals and humans (intentional planting, by machinery and equipment, contaminated produce and garden waste).

Current and potential distribution

Wandering trad is currently present in ACT, NSW, QLD, SA, TAS, VIC and WA and has the potential to spread further through these jurisdictions.

Beneficial uses

The variegated form of Wandering trad can be valued as an ornamental plant and beneficial to industry as a traded species. However, it is not managed in any specific land use for its beneficial use.

Current and potential negative impacts

Assessed as:

- Current high impacts at a regional – multi-regional (or medium impact at multi-regional – national) level for environment³.
- Current high impacts at a multi-regional – national level for environment⁴.
- Potential high impact at a multi-regional (or medium impact at national) level for environment^{3,5}.
- Potential high impact at a multi-regional – national level for environment⁴.

³ Impacts on vegetation structure

⁴ Impacts on Australian biodiversity

⁵ Modification of ecosystem functions

Economic (market): Wandering trad has an insignificant impact on overall agricultural yield and productivity. Occasional nitrate poisoning in cattle has been reported, but evidence is inconsistent, and it is not formally classified as poisonous in Australia. The primary economic burden stems from management costs, as the plant's regenerative ability from stem fragments requiring careful removal and disposal. Its glossy leaves may reduce herbicide effectiveness over time. There is no evidence that it directly affects the product quality or restricts market access.

Environmental: Wandering trad poses environmental threats by forming dense, horizontal mats that dominate the ground layer in a range of habitats, including subtropical rainforests, and riparian vegetation. This ground-level dominance suppresses germination of native understorey and overstorey species. It may reduce native plant richness, abundance, and diversity in invaded areas. A study by CSIRO showed that native plant richness can decline by up to 80% in heavily infested areas (over 60% coverage). It threatens multiple endangered ecological communities in NSW and is considered a high-risk species in VIC, affecting coastal plains, inland ranges, and forested ecosystems. It may impact ecosystem functions by altering nutrient cycling (increasing litter decomposition and plant-available nitrate), changing soil moisture and microclimate.

Social: Wandering trad is not considered toxic to humans, however it can cause minor skin irritation and allergic reactions in humans and pets (dogs). Psychological stress may occur due to challenges in controlling infestations. Dense infestations can reduce access to recreational areas, impede movement, contribute to flooding by clogging drains and watercourses, and diminish the aesthetic and recreational value of natural spaces.

Cultural: No published evidence exists of impacts on oral traditions, ritual, or heritage values. It may impact connection to Country by altering native vegetation and ecosystem resources, reducing access to culturally significant species and sites, potentially affecting traditional practices (hunting, gathering) and knowledge transfer. Infestations may reduce availability of native plants used for food, medicine, or other traditional purposes.

Proposed actions to improve management

Benefits of national plan/approach: Some actions could be done at state/regional level, however there are efficiencies to coordinating actions via national plan/approach (e.g. efficient use of resources, clearly signalling need for action/s). Particularly, unified/consistent approach in relation to nursery trade.

Focus of national plan/approach: Reduce negative environmental impacts caused by this species.

The following potential management actions have been considered as part of the NEWP detailed assessment process, and would be refined with stakeholders through the development of a national plan:

- 1) **On-ground management actions** – advancing innovation for chemical (and new chemical) control options to reduce costs and explore new options for mechanical control and habitat manipulation; exploring more biocontrol release sites and monitoring; sharing best practice chemical approach and integrated weed management.
- 2) **Research and development for the species** – improving surveying (structured and ad hoc) and mapping of infestation locations; sharing knowledge.
- 3) **Policy and regulation** – harmonising legislation and policy (i.e. nationally consistent ban from sale/trade); improving government policy, particularly for nursery trade.
- 4) **Capacity building and awareness** – developing periodic updates of awareness materials to best practice; encouraging ongoing contribution to adaptive management cycle, and continuous reporting to assist with land management.
- 5) **Asset protection** – sharing knowledge on which ecological communities are impacted and where successfully managed; implementing consistent Key Threatening Process prioritisation; sharing consistent messaging.

Appendix C: Summary of evidence base: species that did not meet national significance criteria

The evidence base for each of the 14 species not eligible for consideration as national established weed priorities are summarised in this section, including negative impacts, proposed management, and benefits from taking nationally coordinated action for each species.

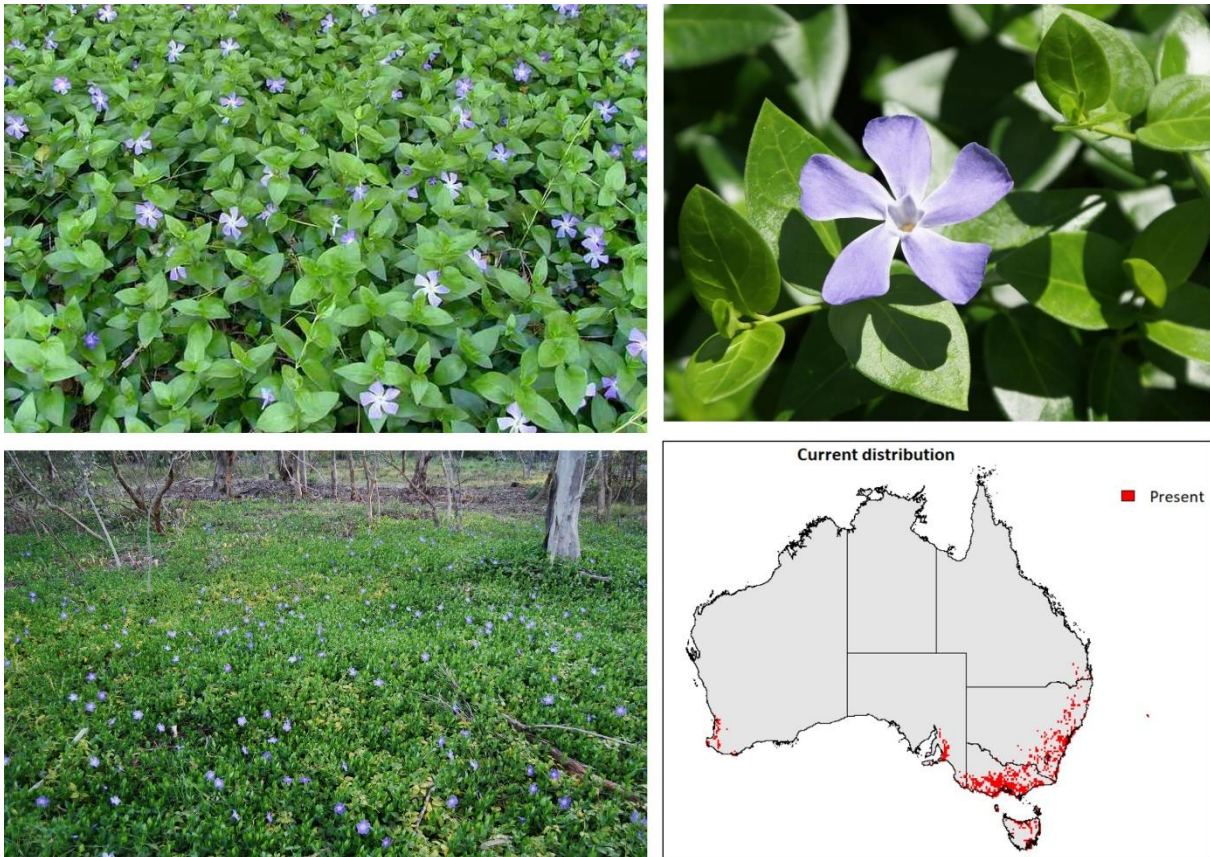
Current and potential negative impacts summary information is derived from information provided by assessors in the expert elicitation process. These summaries, along with the scores for the respective categories, were considered by the NEWP SG/WWG. Each individual statement/justification provided by assessors has not been verified. References provided by assessors for the species will be made available on the Weeds Australia NEWP webpage as additional information to this document.

Results for current and potential negative impact presented below are by domain (economic (market), environment, social, cultural), where numbers indicate the question (page 17-19) where it is has been assessed at the magnitude and scale indicated (e.g. high impact at national level).

Numbers and questions are as follows:

- ¹ Impacts on yields and management inputs
- ² Impacts on quality of products
- ³ Impacts on vegetation structure
- ⁴ Impacts on Australian biodiversity
- ⁵ Modification of ecosystem functions
- ⁶ Impacts on human health
- ⁷ Impacts on social amenity
- ⁸ Impacts on oral tradition, practice, ritual and knowledge
- ⁹ Impacts on subsistence, sustenance and craftsmanship resources
- ¹⁰ Impacts on heritage (place based)

Blue periwinkle (*Vinca major*)



TOP LEFT: © Sheldon Navie, TOP RIGHT: © Terry Inkson, BOTTOM LEFT: © Andrew Mitchell, BOTTOM RIGHT: Source: ABARES Current distribution map based on distribution records from the Atlas of Living Australia and additional distribution records supplied by the state and territory WWG as required

Summary of detailed assessment

Invasiveness

Blue periwinkle invades streambanks and spreads into bush, waterways, rainforest and a variety of vegetation types. It is allelopathic and smothers other plants, forming dense mats in both shade and sun. It rarely produces seed but reproduces vegetatively by stolons and other stem fragments. Fragments spread along waterways. It could occasionally be spread via markets, market growers or shared amongst gardeners. It is often dumped as garden waste and can be spread through contaminated soil.

Current and potential distribution

Blue periwinkle is currently present in ACT, NSW, QLD, SA, TAS, VIC and WA.

Beneficial uses

Blue periwinkle is valued as a garden ornamental or ground cover. It is commonly sold in plant nurseries. It is not managed in any specific land use or regions/areas for its beneficial use.

Current and potential negative impacts

Assessed as:

- Current high impacts at a regional – multi-regional (or medium impact at multi-regional – national) level for environment^{3,4,5}.
- Potential high impact at a regional – multi-regional (or medium impact at multi-regional to national) level for environment^{3,4,5}.

³ Impacts on vegetation structure

⁴ Impacts on Australian biodiversity

⁵ Modification of ecosystem functions

Economic (market): There is limited evidence of significant economic (market) impacts. Blue periwinkle is unpalatable and toxic to livestock, particularly horses, with infrequent cases of poisoning in sheep and cattle. It may reduce grazing capacity in invaded areas, especially horse paddocks. While not a major concern in actively grazed pastures, management is required where infestations occur. It has no known impact on market access or product quality, but minor impacts to raw material value (e.g. sand, soil, mulch) is possible.

Environmental: Blue periwinkle may smother native flora and prevent regeneration of trees and shrubs. It can suppress seedling growth through shading and possibly allelopathy, altering ground and mid-storey vegetation. It competes with native species for light, moisture, and nutrients, reducing species richness and may pose a threat to endangered plants. Dense cover can affect fauna, with documented impacts on ground-dwelling species. It can alter ecosystem processes by suppressing seedling recruitment, potentially delaying succession and affecting fire regimes.

Social: Blue periwinkle may have impacts on human health and social amenity. It contains toxic alkaloids which can cause gastrointestinal distress, neurological symptoms, and, in severe cases, death if ingested (frequency unknown). It may reduce the visual and recreational value of bushland and riparian areas through dense ground cover that can smother native vegetation. Its further spread could affect conservation areas and public enjoyment of natural spaces across southern temperate regions.

Cultural: While direct evidence is limited, Blue periwinkle's ability to form monocultures in riparian and bushland areas could reduce the availability of natural materials used for food, medicine, and cultural practices. Restricted access to culturally significant sites and traditional resources could affect oral traditions and cultural practices. There is no published evidence of direct impacts from this species on First Nations place-based cultural heritage, however dense infestation could damage culturally significant landscapes, particularly given the widespread presence of First Nations heritage across Australia.

Considered actions to improve management

Overall, while there may be some efficiencies to coordinated action, a national strategic plan or approach was not considered essential with actions that could be coordinated and implemented at lower scales (e.g. local, regional and state). Not a strong case for a standalone national strategic plan/approach. Potentially this species could be part of a future project to develop guidelines for restoring closed forest/riparian ecosystems, along with Wandering trad, Broad-leaf privet, Camphor

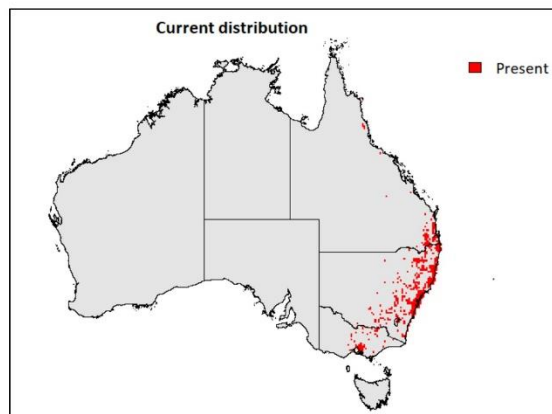
laurel, Mickey Mouse plant and other low light-tolerance weeds. The focus would be on reducing invasion risk and enhancing ecosystem recovery and resilience following invasion.

The following potential management actions have been considered as part of the NEWP detailed assessment process:

- 1) **On-ground management actions** – supporting research and development to optimise herbicide application methods; establishing demonstration sites showcasing best-practice integrated weed management for Blue periwinkle, including combinations of chemical, mechanical, and cultural controls, and sharing outcomes nationally; developing standardised monitoring and evaluation protocols to assess the effectiveness of management actions; sharing lessons learned and supporting adaptive management, across regions.
- 2) **Research and development for the species** – improving detection through tools like iNaturalist and WeedScan; coordinating regional mapping; consolidating existing distribution records across platforms; advancing research into ecology; launching citizen science campaigns (e.g., via apps or local events) to improve mapping of Blue periwinkle distribution, raise awareness, and encourage community-led monitoring and control.
- 3) **Policy and regulation** – improving consistency in legislation and policy (i.e., nationally consistent ban from sale/trade); standardising guidance; sharing of policy /guidelines information across jurisdictions; identifying and managing key pathways for Blue periwinkle spread (e.g., garden waste dumping, nursery trade); targeting education for gardeners, landscapers, and nurseries; considering voluntary or regulatory restrictions on sale in high-risk areas.
- 4) **Capacity building and awareness** – developing public awareness and community-based initiatives for promoting a consistent message and encouraging behaviour change.
- 5) **Asset protection** – standardising approaches and resources to protect assets at risk; implementing coordinated/integrated restoration of invaded sites with competitive native groundcovers and shrubs following Blue periwinkle removal, to reduce reinvasion risk and support ecosystem recovery.

Broad-leaf privet (*Ligustrum lucidum*)

(Group nomination: includes the two species *Ligustrum lucidum* and *L. sinense*.)



TOP LEFT: © The State of Queensland, TOP RIGHT: © Elissa van Oosterhout, BOTTOM LEFT: © Elissa van Oosterhout, BOTTOM RIGHT: Source: ABARES Current distribution map based on distribution records from the Atlas of Living Australia and additional distribution records supplied by the state and territory WWG as required

Summary of detailed assessment

Invasiveness

Broad-leaf privet invades a wide range of ecological communities and is widely naturalised in both disturbed and undisturbed habitats. It is tolerant of a wide range of soils and light conditions. It is a prolific seed producer. Seeds can persist in soil for 1 to 2.5 years. Long distance dispersal can occur from flooding and short distances in waterways. It is dispersed by wild vertebrates such as birds and flying foxes, with spread by livestock less likely. It is still widely used for hedging (deliberate spread by people) and is often dumped in garden waste.

Current and potential distribution

Broad-leaf privet is currently present in ACT, NSW, QLD and VIC. Broad climatic suitability modelling shows it has the potential to establish in SA, TAS and WA.

Beneficial uses

Broad-leaf privet can be valued as a garden ornamental or heritage planting. Broad-leaf privet was once a common ornamental plant, although Broad-leaf privet (*L. lucidum*), Small-leaf privet (*L.*

sinense) and European privet (*L. vulgare*) are no longer commonly traded and have been replaced by other privet species (such as Box-leaf privet (*L. undulatum*)). It is not managed in any specific land use or regions/areas for its beneficial use.

Current and potential negative impacts

Assessed as:

- Current high impacts at a regional – multiregional (or medium impacts at a multi-regional – national) level for environment^{3,4,5} and social⁶.
- Potential high impact at a regional – multi-regional (or medium at a multi-regional to national) level for environment^{3,4,5} and social⁶.

³ Impacts on vegetation structure

⁴ Impacts on Australian biodiversity

⁵ Modification of ecosystem functions

⁶ Impacts on human health

Economic (market): There is limited evidence of significant economic impacts from Broad-leaf privet, minor effects reported. Broad-leaf privet may impact pastoral and forestry systems. There are some reports of reducing yields in orchards, pastures, and plantation forests, and competition with crops for pollinators. Broad-leaf privet may also host pests and diseases affecting economically important plants. It is mildly toxic to livestock, but no confirmed poisoning cases have been reported in Australia. Management can be labour-intensive and costly. There is no clear evidence that privet directly affects product quality or market access

Environmental: Broad-leaf privet can alter native vegetation structure, impact biodiversity, disrupt key ecosystem processes, particularly across eastern Australia. Dense, monodominant stands can suppress understorey growth and alter forest composition. It may outcompete native vegetation, inhibit forest regeneration and reduce species richness and diversity. These changes can affect both flora and fauna, including threatened species and ecological communities. The species may alter soil seed banks, litter composition and microclimates leading to long-term ecosystem degradation. Key ecosystem processes that may be altered by the weed include reducing soil moisture, deep water availability, and groundwater recharge, particularly in dry and riparian environments. Dense infestations can alter fire regimes, either suppressing fire in moist thickets or increasing fire intensity through fuel accumulation during dry periods.

Social: It may affect human health primarily through mild toxicity and respiratory irritation. Ingesting berries or leaves may cause gastrointestinal symptoms, and contact can lead to skin or eye irritation. Pollen and floral scent are linked to allergic reactions, including hay fever and asthma, with at least one reported hospitalisation. It moderately affects social amenity across multiple regions as it interferes with infrastructure such as power and telephone lines and poses road safety risks due to reduced visibility and hard impact hazards. In natural areas, it may degrade bushland and park biodiversity, overtake trails, diminishing recreational value. These impacts are expected to increase as the species spreads inland.

Cultural: There is no direct evidence of current impact on First Nations oral traditions or cultural practices, subsistence or craftsmanship resources and cultural heritage. Native bush foods like yams (*Microseris* spp.), native fruits (e.g. lilly pilly (*Syzygium* spp.), Midyim berry (*Austromyrtus dulcis*)), and

edible greens may become less accessible as privet dominates the understory. Reduced access to these plants may make it harder to maintain traditional practices like basket-weaving, weapon-making, or ceremonial use, and may disrupt intergenerational knowledge transfer, undermines rituals, and storytelling. Dense infestations could degrade cultural heritage sites, obscure or physically block access to sacred sites, ceremonial grounds or burial areas.

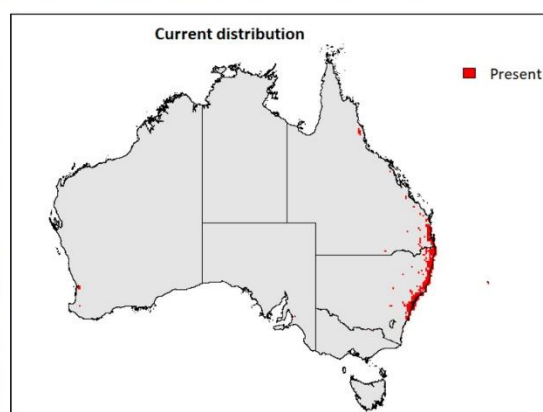
Considered actions to improve management

A national strategic plan or approach was not considered essential as actions could be coordinated and implemented at lower scales (e.g. local, regional and state). Not a strong case for a standalone national strategic plan/approach. Potentially this species could be part of a future project to develop guidelines for restoring closed forest/riparian ecosystems.

The following potential management actions have been considered as part of the NEWP detailed assessment process:

- 1) **On-ground management actions** – exploring new chemical options, including improved application techniques (e.g., splatter guns).
- 2) **Research and development for the species** – surveying in rainforest/riparian areas; mapping of the extent to inform spread prevention and asset protection strategies; implementing exploratory biocontrol research and further investigating of privet lace bug; improving tools for management in rainforest/riparian areas (e.g. use of prescribed burning in restoration regimes).
- 3) **Policy and regulation** – harmonising legislation and policy (i.e., nationally-consistent ban from sale/trade); establishing spread prevention zones, particularly in VIC and ACT; engaging with industry to remove invasive privets from trade.
- 4) **Capacity building and awareness** – developing public awareness and community-based initiatives.
- 5) **Asset protection** – implementing targeted, integrated weed management plans for protecting assets at risk; leveraging investment through a national plan.

Camphor laurel (*Cinnamomum camphora*)



TOP LEFT: © Sheldon Navie, TOP RIGHT: © The State of Queensland, BOTTOM LEFT: © State of New South Wales, BOTTOM RIGHT: Source: ABARES Current distribution map based on distribution records from the Atlas of Living Australia and additional distribution records supplied by the state and territory WWG as required

Summary of detailed assessment

Invasiveness

Camphor laurel can be very invasive in pasture and native vegetation as well as dominating in disturbed areas. It can form monocultures, outcompeting native vegetation. It has a dense shallow root system which combined with shading prevents the regeneration of native plants. The leaf litter is allelopathic. It is a prolific seed producer. Seeds persist in soil for about 3 years. Seeds are dispersed through waterways and wild vertebrates (birds, foxes, rats). It could occasionally be spread by farm vehicles on muddy tyres and by livestock. There is some evidence it is still planted for amenity and shade for livestock, therefore deliberately spread by people.

Current and potential distribution

Camphor laurel is currently present in NSW, QLD, SA and WA, with broad climatic suitability modelling indicating it has the potential to establish in VIC.

Beneficial uses

Several stakeholders value Camphor laurel in Australia. Camphor laurel has several benefits including (1) medicinal uses (relieve pain, reduce inflammation, and treat skin conditions like eczema and acne); (2) aromatherapy (alleviate respiratory issues, reduce stress, and improve sleep quality); (3) insect repellent (repelling insects and mosquitoes); (4) wood and timber (valuable for furniture and

cabinetry); (5) cultural and spiritual significance (religious rituals and ceremonies); (6) a seasonal food source and habitat structure for native frugivorous birds. The North Coast of NSW has a small Camphor laurel timber industry, and it is also cultivated as timber in QLD.

Current and potential negative impacts

Assessed as:

- Current high impacts at a regional – multi-regional (or medium at multi-regional – national level) level for environment³.
- Current high impacts at a multi-regional – national level for environment⁴.
- Potential high impact at a multi-regional – national level for environment^{3,4,5}.

³ Impacts on vegetation structure

⁴ Impacts on Australian biodiversity

⁵ Modification of ecosystem functions

Economic (market): Camphor laurel reduces pasture productivity. Large trees are known to impact infrastructure such as fence lines. No evidence on direct market access or product quality impacts.

Environmental: Camphor laurel invades and replaces native tree species. Its shallow roots system eliminates the understorey and mid-storey altering the vegetation structure at multiple levels. In south-east QLD, Camphor laurel was 5th on list of 66 priority invasive weeds from 2002. It can form monocultures excluding native species, known to compete with Blue gums (*Eucalyptus tereticornis*), threatening koala populations. Whilst not well documented, it may destabilise stream banks due to undercutting of shallow root system. It has strong allelopathic impacts on surrounding vegetation, possible impact on soil biota.

Social: Camphor laurel is mildly toxic to humans, and mild symptoms may occur if large quantities are eaten. All parts of the plant are poisonous and can cause nausea, vomiting and respiratory distress. Allergic skin reactions can also occur. Control efforts may impose financial and emotional strain on landholders. It may impact social amenity by damaging urban infrastructure (pushing over fences, disrupting power lines, and cracking urban surfaces) through its invasive root systems and reducing the recreational value of parks and waterways. Dense infestations also reduce access to natural areas, affecting community mental health and scenic values.

Cultural: Camphor laurel may reduce access to traditional subsistence and craft resources by displacing native plants used for food, medicine, and cultural practices. Its dominance may also affect native fauna important for traditional diets and disrupts access to materials used in weaving, tool-making, and other crafts.

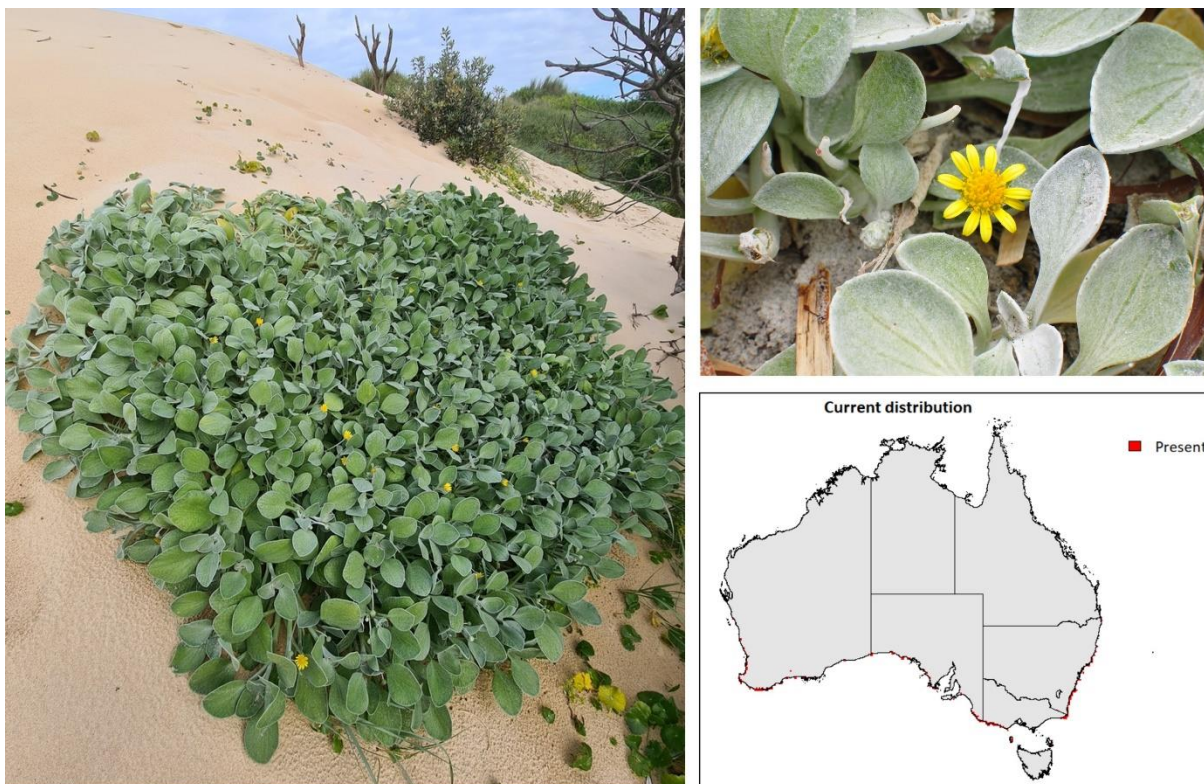
Considered actions to improve management

A national strategic plan or approach was not strictly needed because actions could be coordinated and implemented at lower scales, particularly across NSW and QLD who are most impacted. It was not considered a strong case for national coordination. Potentially this species could be part of a future project to develop guidelines for restoring closed forest/riparian ecosystems.

The following potential management actions have been considered as part of the NEWP detailed assessment process:

- 1) **On-ground management actions** – improving cost-effective, standardised best practice techniques, chemicals and application techniques (i.e., droned delivered); investigating the use of fire as part of integrated weed management; sharing knowledge and resources.
- 2) **Research and development for the species** – developing improved tools for early detection and data sharing; understanding dispersal rates, impacts and spread under changing environmental conditions; improving biology/ecology knowledge; sharing cross-border ecosystem management.
- 3) **Policy and regulation** – harmonising legislation and policy (i.e. nationally consistent ban from sale/trade; spread prevention zones); standardising guidelines; aligning containment measures; supporting local management efforts through coordinated, strategic planning.
- 4) **Capacity building and awareness** – supporting training, skills development and workforce development; strengthening communities of practice and community engagement; establishing 'Community-Led Knowledge Hubs'; enhancing consistency in public messaging.
- 5) **Asset protection** – developing a strategic plan for asset protection.

Coast beach daisy (*Arctotheca populifolia*)



LEFT: Jenny Conolly, iNaturalist, [CC0 1.0](https://creativecommons.org/licenses/by/4.0/), TOP RIGHT: © Matthew Baker, Tasmanian Herbarium, BOTTOM RIGHT: Source: ABARES Current distribution map based on distribution records from the Atlas of Living Australia and additional distribution records supplied by the state and territory WWG as required

Summary of detailed assessment

Invasiveness

Coast beach daisy is a rapidly growing species that prefers newly exposed margins of coastal dunes. It has established (to varied densities) along the entire southern part of the Australian coastline, including along the south coast of WA, from the Esperance plains to the Geraldton sandplains. It can spread from sand dunes to nearby grasslands. It is dispersed by ocean currents and seeds are viable in fresh or salt water. It is also wind dispersed, and seeds get transported in soil, on vehicle tyres and in garden waste. It could occasionally be spread via local markets, market gardens or shared among gardeners.

Current and potential distribution

Coast beach daisy is currently present in NSW, SA, TAS, VIC and WA, with potential to establish in QLD.

Beneficial uses

Coast beach daisy has no known beneficial uses.

Current and potential negative impacts

Assessed as:

- Current high impacts at a regional – multi-regional (or medium impact at multi-regional – national) level for environment^{3,4,5}.

- Potential high impact at a multi-regional – national level for environment^{4,5}.

³ Impacts on vegetation structure

⁴ Impacts on Australian biodiversity

⁵ Modification of ecosystem functions

Economic (market): Coast beach daisy is not considered a weed of agriculture or production, and there is currently no documented evidence of direct economic impacts on crop yields or product quality.

Environmental: Coast beach daisy may impact vegetation structure by increasing plant cover in typically sparse beach zones, particularly between the strandline and foredune. While this may appear beneficial, it can disrupt native dune systems, especially the spinifex layer leading to habitat changes that negatively affect beach-dependent species. It may pose a threat to Australian biodiversity, particularly in coastal dune systems. It can compete with native vegetation such as Hairy spinifex (*Spinifex sericeus*) and encroaches on bare sandy areas critical for nesting shorebirds, including the vulnerable Hooded plover (*Thinornis cucullatus*), Little tern (*Sternula albifrons*), and Red-capped plover (*Anarhynchus ruficapillus*). Its spread may reduce habitat quality and visibility, increasing predation risks for beach-nesting birds. Several threatened dune plant species are at risk from its expansion. It can modify ecosystem functions by colonising bare sand, increasing dune biomass, and altering natural beach dynamics. Its presence may accelerate sand accumulation, which can disrupt native erosion processes and reshape dune formation. With further invasion, further biodiversity impacts are expected, particularly in ecologically sensitive coastal regions.

Social: Coast beach daisy does not pose known risks to human physical or mental health and is not considered toxic. However, large infestations may reduce the visual amenity of beach environments.

Cultural: Coast beach daisy may impact First Nations cultural heritage by altering dune structures that hold cultural and spiritual significance, including burial sites and ceremonial areas. While direct evidence is limited, its presence in culturally important coastal environments suggests potential disruption to access, visibility, and integrity of these places. These changes can interfere with oral traditions, rituals, and place-based knowledge transmission. As the species expands, risks to cultural heritage and associated practices may increase, particularly in regions where dunes are central to cultural identity and history.

Considered actions to improve management

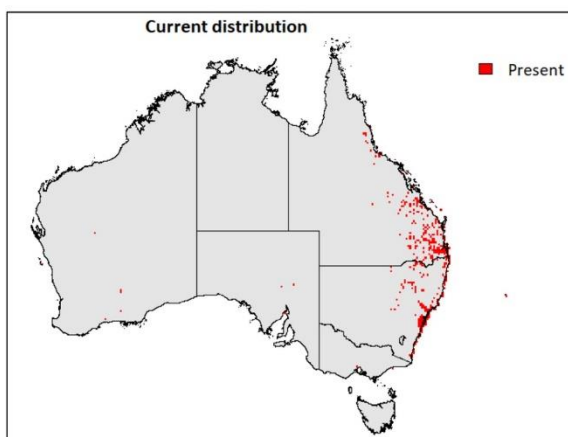
It was determined that this species did not present a strong enough case for a national strategic plan or approach as a standalone species. As a dune weed, it was recommended that consideration is given to integrating action with sea spurge given similar impacts and management needs that would help to protect coastal habitat and nationally important shore birds.

The following potential management actions have been considered as part of the NEWP detailed assessment process:

- 1) **On-ground management actions** – supporting state/nationally led research to achieve cost effective control outcomes (i.e., targeted herbicide research including aerial application, habitat restoration trials) at a landscape scale that could then be shared across stakeholders to improve local management; collaborating with various stakeholders to share knowledge, techniques, and resources for more effective and innovative management.

- 2) **Research and development for the species** – improving surveillance capacity and infestation mapping; addressing knowledge gaps in ecological understanding for effective management; developing and applying remote sensing tools like AI mapping, aerial surveys.
- 3) **Policy and regulation** – improving guidelines and policies; developing plans or strategies to prevent spread into new areas; supporting community groups and land managers to prevent spread into new areas; facilitating regional/state containment/spread prevention.
- 4) **Capacity building and awareness** – developing knowledge and awareness materials, cross-sector communication tools such as national or state level fact sheets and broader awareness initiatives ((e.g., signage, tourism or industry engagement); implementing training programs.
- 5) **Asset protection** – prioritising priority assets at risk nationally to enable strategic national investment; leveraging Coast beach daisy into strategic asset management with other significant coastal weeds.

Common mother-of-millions (*Bryophyllum delagoense*)



TOP LEFT: © The State of Queensland, TOP RIGHT: © Sheldon Navie, BOTTOM LEFT: © Sheldon Navie, BOTTOM RIGHT: Source: ABARES Current distribution map based on distribution records from the Atlas of Living Australia and additional distribution records supplied by the state and territory WWG as required

Summary of detailed assessment

Invasiveness

Common mother-of-millions is a drought tolerant, post-disturbance invader that prevents native plant regeneration. It can invade undisturbed rocky sites or those with poor soils and is well adapted to arid habitats. In such habitats it is a transformer. It is allelopathic and displaces native plants and can grow into tall stands that exclude resources for other plants. It can reproduce vegetatively and produces up to 20,000 seeds per plant. The seeds survive several years. It is dispersed by wind, water, people, wild vertebrates (sea birds) and livestock, dumped garden waste, contaminated soil, sand and gravel.

Current and potential distribution

Common mother-of-millions is currently present in NSW, QLD, SA, VIC and WA, with broad climatic suitability modelling indicating it has the potential to establish in NT.

Beneficial uses

Common mother-of-millions has no known beneficial uses.

Current and potential negative impacts

Assessed as:

- Current high impacts at a regional-multi-regional level (or medium at a multi-regional – national level) for economic (market)¹ and environment^{3,4,5}.
- Potential high impact at a regional – multi-regional (or medium at multi-regional – national) level for economic (market)¹ and environment^{3,5}.
- Potential high impact at a multi-regional level for environment⁴.

¹ Impacts on yields and management inputs

³ Impacts on vegetation structure

⁴ Impacts on Australian biodiversity

⁵ Modification of ecosystem functions

Economic (market): Common mother-of-millions may cause economic impacts, particularly in pastoral regions. It is highly toxic to livestock, with documented cases of cattle deaths and poses ongoing risks to sheep and goats. The species invades rangelands and native pastures, reducing productivity. Control is labour-intensive and costly, often requiring chemical treatments and grazing restrictions, mechanical control, which further increase management burdens. Additionally, it hosts the South African citrus thrip (*Scirtothrips aurantii*), a pest of fruit and nut crops, and may affect pasture and crop species through allelopathic interactions. These combined factors contribute to reduced productivity and increased operational costs for landholders. There is limited direct evidence of impacts on product quality, however its toxicity to livestock may affect the quality of hay or forage if contaminated. As the species expands its range, minor impacts on raw materials such as soil or sand may also emerge.

Environmental: Common mother-of-millions may alter vegetation structure, particularly in disturbed habitats and may pose a threat to Australian biodiversity, particularly in semi-arid and coastal regions. It can form dense mats that may outcompete native vegetation. For example, in one flora reserve in NSW, it is disrupting regeneration of remnant stands of Brigalow (*Acacia harpophylla*). It is also among 1 of 4 plant species that is interfering with habitat structure and food sources for native fauna, including the EPBC Act listed Bridled nail-tailed wallaby (*Onychogalea fraenata*) and Isis tamarind (*Alectryon ramiflorus*).

Social: Common mother-of-millions is highly toxic to humans and pets, especially dogs, with ingestion potentially causing serious health issues. However, poisoning cases are rare. Physical contact may cause skin irritation. Worker safety is a concern during control operations. The mental health impacts are indirect, with the weed's persistence and toxicity may contribute to emotional distress and financial strain from control efforts. Infestations may also reduce the aesthetic and recreational value of parks, reserves, and coastal areas, diminishing public enjoyment and usability of these spaces.

Cultural: While current evidence is limited, Common mother-of-millions could cause moderate damage or restrict access to significant cultural sites or resources. Dense mats can outcompete native flora, which may reduce bush tucker and traditional healing resources, displacing species that provide materials for crafts such as weaving and toolmaking, thereby threatening the transmission of cultural knowledge. The nomination notes potential impacts on culturally significant flora in dunes (e.g. pigface (*Carpobrotus* spp., coast ballart (*Exocarpos* spp.), Coast beard heath (*Leucopogon*

parviflorus), saltbushes (*Atriplex* spp.), boobialla (*Myoporum* spp.), Midyim berry (*Austromyrtus dulcis*), referencing Tim Low's Bush Tucker. Potential for moderate impact to place-based heritage as it may form monocultures which could alter culturally significant landscapes and disrupt traditional fire management practices.

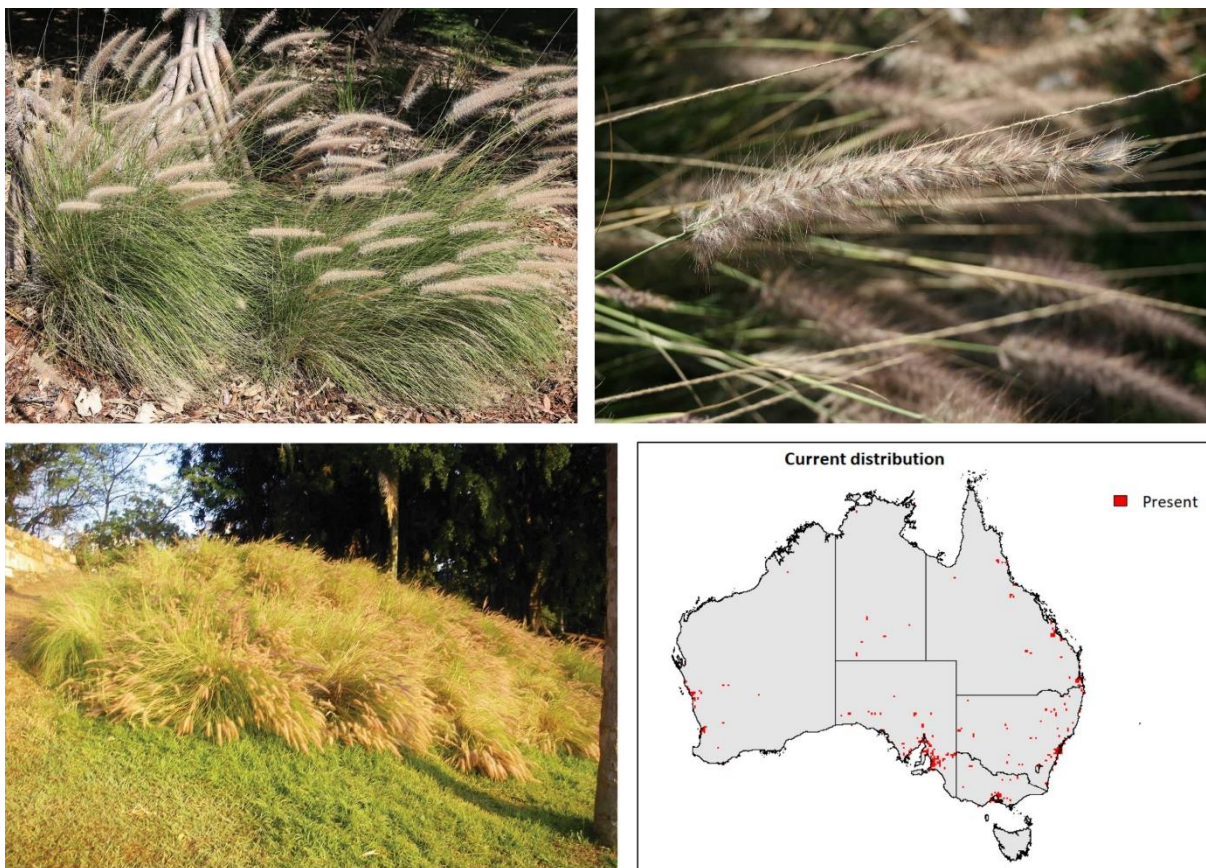
Considered actions to improve management

National coordination would provide some benefit but is not essential. A national strategic plan or approach was not considered essential because actions could be coordinated and implemented at lower scales (e.g. local, regional and state) and some actions are already underway. Local control or containment programs are carried out at a regional level in NSW and QLD. Not considered to present a strong case for a national strategic plan.

The following potential management actions have been considered as part of the NEWP detailed assessment process:

- 1) **On-ground management actions** – advancing research into fire as a tool; supporting better timings of integrated control programs; developing and disseminating a best practice manual for integrated control, including mechanical, chemical, and habitat manipulation techniques.
- 2) **Research and development for the species** – advancing research into biological control agents (noting that some have shown promise but were delayed due to potential off-target impacts on traded exotic succulents, and this conflict requires resolution); improving the ability to identify and detect Common mother-of-millions (including online selling and trading in nurseries); improving early detection; collating data on infestation locations to support a national control program; improving knowledge of seed viability.
- 3) **Policy and regulation** – harmonising legislation and policy (i.e. nationally consistent ban from sale/trade; spread prevention zones) for spread prevention and containment; identifying and managing new infestations; developing “grow me instead” guidance for nurseries.
- 4) **Capacity building and awareness** – improving awareness and education of the toxicity of the plant; improving partnerships and collaboration for management.
- 5) **Asset protection** – conducting national-level assessments to identify priority assets at risk; developing site-specific protection plans where needed; integrating Common mother-of-millions into existing Key Threatening Process frameworks where relevant.

Fountain grass (*Cenchrus setaceus*)



TOP LEFT: © The State of Queensland, TOP RIGHT: © The State of Queensland, BOTTOM LEFT: © The State of Queensland, BOTTOM RIGHT: Source: ABARES Current distribution map based on distribution records from the Atlas of Living Australia and additional distribution records supplied by the state and territory WWG as required

Summary of detailed assessment

Invasiveness

Fountain grass is an invasive grass that invades a wide range of habitats, establishes monocultures, particularly in dry grasslands. Areas covered in thick vegetation or forest areas are unlikely to be invaded, however, open, dry, rocky sites such as semi-arid desert and shrubland are susceptible. Long distance dispersal primarily via wind and wild vertebrates (birds and animals). Seeds may also attach to livestock and can be spread by vehicles, attaching to clothing or intentionally by people (popular as an ornamental plant).

Current and potential distribution

Fountain grass is currently present in NSW, QLD, NT, WA, SA, VIC, ACT and TAS.

Beneficial uses

Fountain grass is an ornamental plant commonly found in gardens and along roadsides. Fountain grass has also previously been used for soil stabilisation, but this use is no longer common.

Current and potential negative impacts

Assessed as:

- Current medium impacts at a regional – multiregional level for economic (market)¹ and environment^{3,4,5}.
- Potential high impact at a regional- multi-regional level for economic (market)¹ and environment³.
- Potential high impact at a multi-regional-national level for environment^{4,5}.

¹ Impacts on yields and management inputs

³ Impacts on vegetation structure

⁴ Impacts on Australian biodiversity

⁵ Modification of ecosystem functions

Economic (market): Fountain grass is a relatively unpalatable species that may reduce pasture quality and carrying capacity by outcompeting desirable forage grasses, particularly in degraded or semi-managed grazing systems. Control may be costly, and reinvasion is common. No contamination or certification risks are documented and evidence of economic impacts on specific grazing industries appear limited.

Environmental: Fountain grass may alter vegetation structure by forming monocultures and displacing native plant strata, particularly in arid and semi-arid environments. It may impact biodiversity by outcompeting native plant species, suppressing regeneration, and altering fire regimes. It can form monocultures that may reduce habitat diversity and quality, impacting both flora and fauna. It is impacting local populations of the endangered Cunningham skink (*Egernia cunninghami*) in Adelaide by shading rocky basking sites and changing the habitat for the endangered Chestnut rumped heathwren (*Hylacola pyrrhopygia parkeri*) in SA. It may increase fire frequency and intensity, promoting hotter and more frequent fires. It may also alter nutrient cycling and water availability.

Social: Fountain grass produces wind-borne pollen but is not considered highly allergenic compared to other grass species. It may impede pedestrian and vehicle access and may potentially damage rail reserves and roads by growing in cracks. Its simplification of ecosystems may reduce native plant diversity and associated amenity values, such as wildflower displays and granivorous bird populations, which are socially and economically important to regional communities.

Cultural: Fountain grass may affect access to culturally significant sites through dense infestations and altered fire regimes. Fountain grass is not directly used for food, medicine, or craft, but its spread may displace native bush food and medicinal plant species. Increasing fire intensity may potentially damage sacred or culturally important landscapes. While no direct impacts on built infrastructure are reported, future risks could occur if its distribution expands.

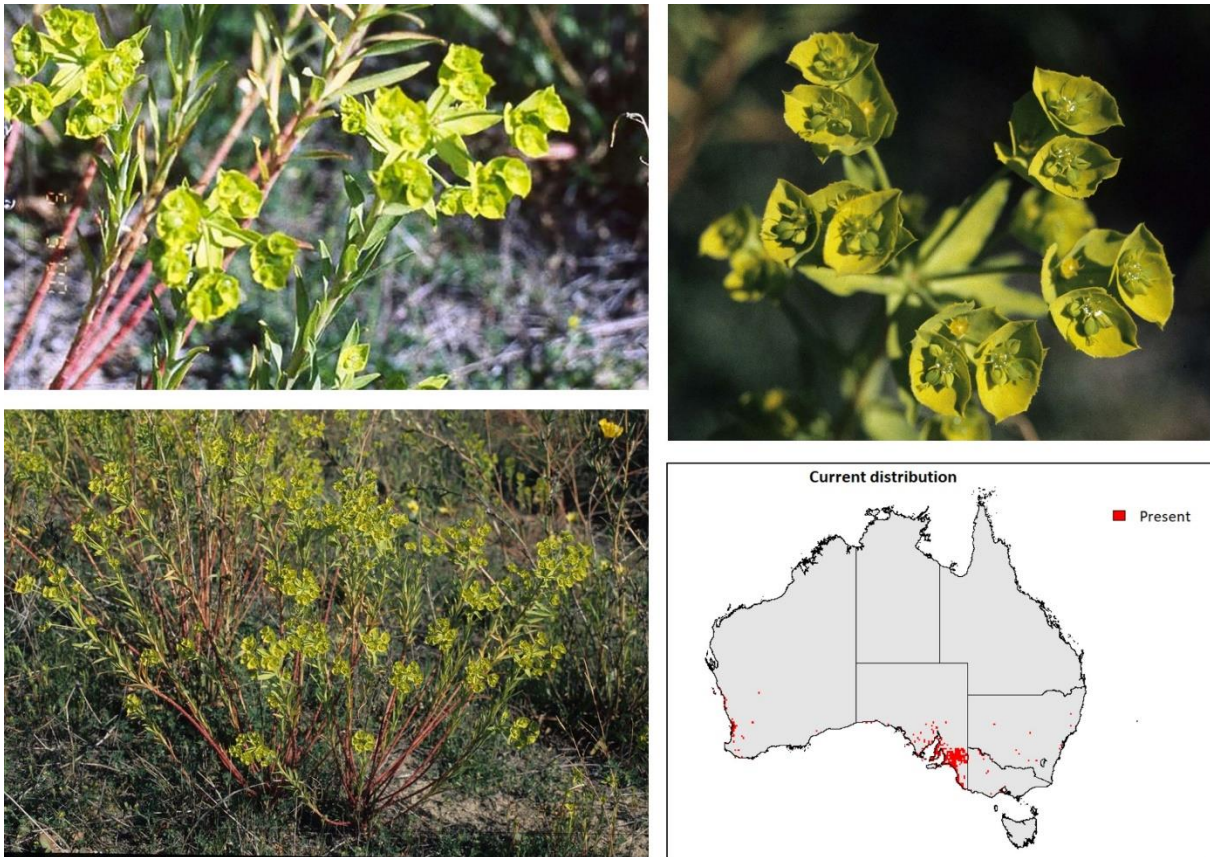
Considered actions to improve management

National coordination would provide some benefit but is not essential. A national strategic plan or approach was not considered necessary because actions could be coordinated and implemented at lower scales (e.g. local, regional and state) and many actions already in place. Not a strong case for national coordination.

The following potential management actions have been considered as part of the NEWP detailed assessment process:

- 1) **On-ground management actions** – implementing further testing of herbicide timing for Group A and Group B (grass specific cropping) herbicides; supporting fire and herbicide integrated management trials.
- 2) **Research and development for the species** – improving infestation mapping and surveillance capacity using tools like remote sensing; supporting targeted biology and ecology research; implementing exploratory biocontrol research.
- 3) **Policy and regulation** – harmonising legislation and policy (i.e. nationally consistent ban from sale/trade; spread prevention zones).
- 4) **Capacity building and awareness** – improving awareness on when and how to manage the species; developing awareness materials for the ornamental plant industry.
- 5) **Asset protection** – developing plans for protection of priority sites and values.

Geraldton carnation weed (*Euphorbia terracina*)



TOP LEFT: © Government of South Australia, TOP RIGHT: © Government of South Australia, BOTTOM LEFT: © Government of South Australia, BOTTOM RIGHT: Source: ABARES Current distribution map based on distribution records from the Atlas of Living Australia and additional distribution records supplied by the state and territory WWG as required

Summary of detailed assessment

Invasiveness

Geraldton carnation weed invades natural areas but initially requires disturbance. Once established, it is very invasive. It can also invade ephemeral wetlands. It can adapt to shade and is tolerant of waterlogging and drought. It inhibits the growth of native plants and crops. It also has allelopathic properties. It is spread by water and possibly by animals and birds. Machinery and equipment are vectors. The movement of soil by earth moving equipment has likely played a significant role in the spread into disturbed habitats.

Current and potential distribution

Geraldton carnation weed is currently present in NSW, SA, VIC and WA, with broad climatic suitability modelling indicating it has the potential to establish in QLD and TAS.

Beneficial uses

Geraldton carnation weed has no known beneficial uses.

Current and potential negative impacts

Assessed as:

- Current high impacts at a regional – multiregional level (or medium at a multi-regional – national level) for environment^{3,4}.
- Potential high impact at a regional -multi-regional level (or medium at multi-regional national level) for environment³.
- Potential high impact at a multi-regional-national scale for environment⁴.

³ Impacts on vegetation structure

⁴ Impacts on Australian biodiversity

Economic (market): Geraldton carnation weed may compete with pasture species and is unpalatable to livestock, with suspected toxicity though stock poisoning is uncommon. Literature presents mixed views on its threat level, ranging from minimal to serious in grazing contexts. Its declaration in some jurisdictions aims to prevent seed movement in hay, indicating a low-level risk. Overall, economic impacts are considered minor and primarily related to standard weed management.

Environmental: Geraldton carnation weed may alter vegetation structure and ecosystem function by forming monocultures, particularly in coastal and sandy inland habitats. It may displace native herb and grass layers, suppress germination through allelopathic effects, and reduces plant diversity. These changes can simplify habitat structure, disrupt successional processes, and may alter fire frequency. The species poses a medium to high biodiversity risk nationally, especially in WA, SA, VIC, and NSW. It threatens six EPBC Act listed ecological communities in WA, including the critically endangered Tuart Woodlands and Forests, and invades conservation areas and biodiversity hotspots. While it may impact threatened communities, it is unlikely to drive extinction. While abiotic impacts such as erosion and water quality are minimal, its ecological transformation presents substantial restoration challenges and long-term risks to native flora and fauna.

Social: Geraldton carnation weed produces a toxic milky sap that can cause skin irritation, eye discomfort, and, in rare cases, more serious reactions such as temporary blindness. While ingestion may pose a risk to children or pets, poisoning is uncommon. Documented impacts are limited, but medical intervention may be required in isolated cases. Overall, health risks are considered low, with potential for moderate impact at a regional scale. Geraldton carnation weed may reduce social amenity by invading parks, reserves, coastal dunes, beaches, walking trails and urban bushland, where dense infestations can limit access and degrade the visual and recreational value of high-value natural areas.

Cultural: While no direct evidence of cultural impacts has been published, its displacement of culturally significant plant species and alteration of fire regimes could affect traditional land management, access to ritual sites, and biocultural values. It may affect access to ritual sites, bushfoods, and medicinal plants, especially in ecologically and culturally important coastal areas. Further investigation is needed to assess the extent of these impacts.

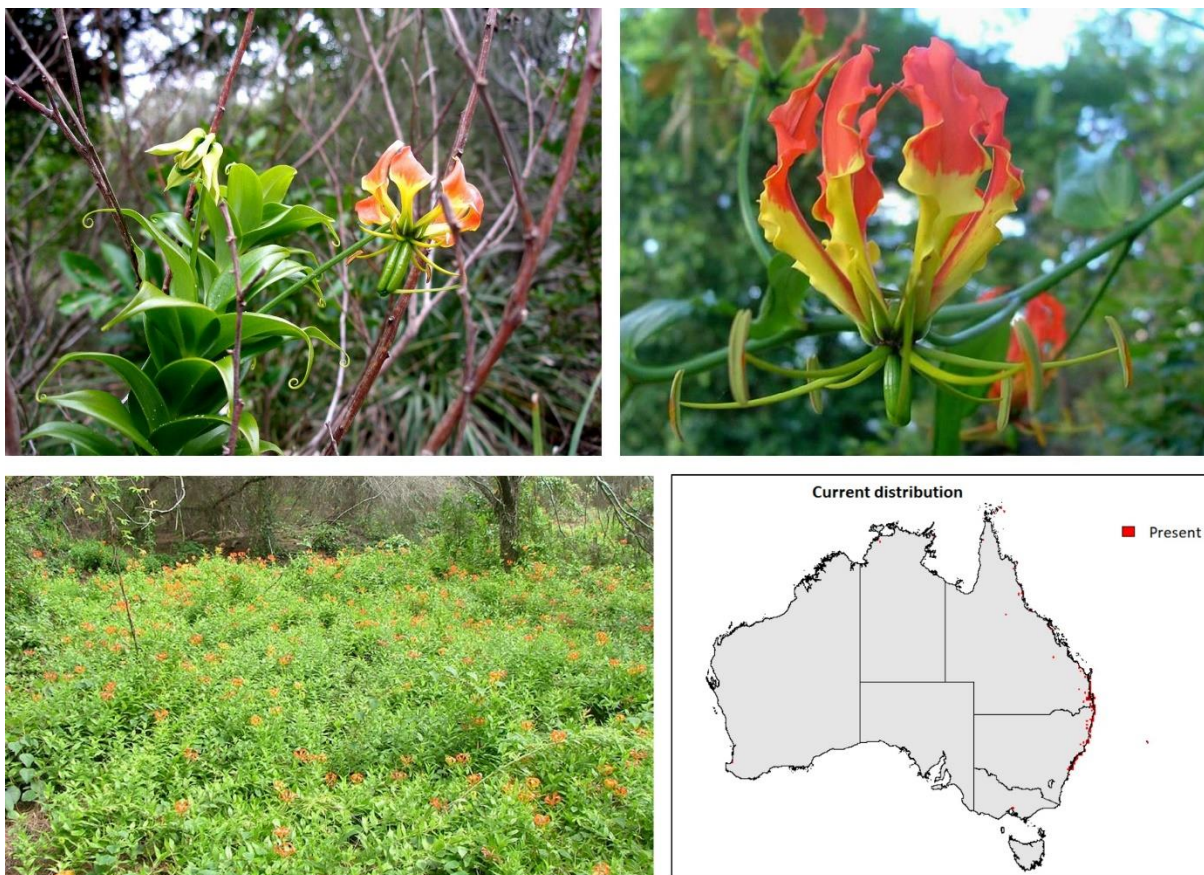
Considered actions to improve management

A national strategic plan or approach would assist but is not considered necessary for improved management to progress. There was not a strong case for a national strategic plan or approach.

The following potential management actions have been considered as part of the NEWP detailed assessment process:

- 1) **On-ground management actions** – supporting research and development to optimise herbicide approaches (including off target impacts and persistence in soil), develop new registrations and permits; explore better approaches to mechanical control and habitat manipulation approaches; sharing best practice techniques and resources.
- 2) **Research and development for the species** – advancing knowledge on dispersal pathways and ecology; improving detection, surveillance, infestation mapping; sharing knowledge; pooling resources (funding).
- 3) **Policy and regulation** – improving government and industry level policies; developing containment strategies to prevent further spread.
- 4) **Capacity building and awareness** – developing new awareness materials; sharing existing knowledge, tools, skills and awareness materials across jurisdictions (from those with knowledge of this species, e.g. WA/SA).
- 5) **Asset protection** – prioritising significant national assets for protection and areas for spread prevention; developing strategic plan for national threat abatement.

Glory lily (*Gloriosa superba*)



TOP LEFT: © Kim Hignell, TOP RIGHT: © Sheldon Navie, BOTTOM LEFT: © Sheldon Navie, BOTTOM RIGHT: Source: ABARES
Current distribution map based on distribution records from the Atlas of Living Australia and additional distribution records supplied by the state and territory WWG as required

Summary of detailed assessment

Invasiveness

Glory lily is invasive in a variety of coastal habitats from rainforests to sand dunes. It forms dense carpets and outcompetes native plants. It reproduces via seeds and underground tubers that can sprout new plants even if fragmented. Tubers can remain dormant during unfavourable conditions (e.g., drought) and resprout when conditions improve, ensuring survival and persistence. Seeds are dispersed by water, birds and animals that eat the fruit. It is also spread in garden waste and contaminated soil.

Current and potential distribution

Glory lily is currently present in NSW and QLD, with broad climatic suitability modelling indicating it has the potential to establish in NT, VIC and WA.

Beneficial uses

Glory lily can be valued as an ornamental plant or commercially grown for pharmaceuticals, botanical gardens, research facilities, ornamental, private use. It is not managed as a beneficial plant in any specific land use.

Current and potential negative impacts

Assessed as:

- Current medium impacts at a regional – multi-regional level for environment^{3,4,5} and social^{6,7}.
- Potential high impact at a regional – multi-regional (or medium at multi-regional – national) level for environment^{3,4,5} and social⁶.

³ Impacts on vegetation structure

⁴ Impacts on Australian biodiversity

⁵ Modification of ecosystem functions

⁶ Impacts on human health

⁷ Impacts on social amenity

Economic (market): Glory lily is unlikely to have significant economic (market) impacts. Its current distribution in coastal dunes does not overlap with grazing lands, so impacts on livestock and pasture productivity are minimal, though future spread into suitable grazing areas could pose minor risks. Management may require repeated interventions, such as foliar herbicide applications, increasing labour and control costs. Glory lily is toxic to livestock due to toxic alkaloids, with reported poisoning in northern Australia. Economic losses from livestock toxicity or yield reduction have not been formally assessed, and the species is not considered a significant pasture weed. Its presence in hay or grain crops may contaminate produce, lowering quality and market value. The plant's toxicity may potentially restrict market access for affected products.

Environmental: Glory lily may alter vegetation structure by forming understory carpets that smother native flora and reduce light availability. It may threaten biodiversity in coastal dunes, lowland areas, coastal scrub, and littoral rainforest, by outcompeting native plants, changing species composition and diversity and habitat integrity. It is listed as a transformer weed affecting nationally threatened Littoral Rainforest and Coastal Vine Thickets in eastern Australia and occurs in habitats supporting threatened flora and conservation-significant ecosystems. It may continue to impact at a regional to multi-regional level. Anecdotal reports also suggest toxicity to native mammals and birds. It can alter nutrient cycling, and modify soil biomes in coastal dune systems, littoral rainforests, and dry sclerophyll forests.

Social: Glory lily is highly toxic to humans, with all parts of the plant, particularly the tubers, containing toxic alkaloids. Ingestion can cause severe poisoning, including gastrointestinal, neurological, cardiac, and bone marrow effects. Contact with the plant may also cause skin irritation. While fatalities have been reported internationally, documented cases in Australia are limited; risks can be mitigated through public awareness and safe handling practices, particularly for workers managing infestations. Its widespread presence in eastern Australian coastal habitats may impact the aesthetic and recreational values of coastal reserves and beaches. Its smothering habit can restrict access walking trails and natural scenery.

Cultural: Glory lily has no published impacts on the oral traditions, rituals, or cultural knowledge of First Nations peoples in Australia. While invasive and toxic, it does not appear in Aboriginal ethnobotanical or cultural records. Its presence in coastal habitats may negatively affect access to culturally significant areas, but there is no evidence of meaningful disruption to cultural practices or heritage.

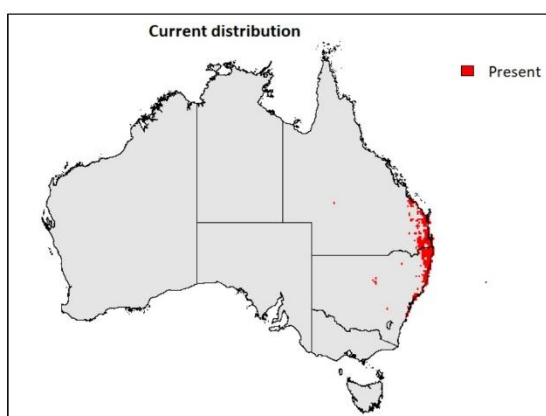
Considered actions to improve management

National coordination would provide some benefit but is not essential. It was determined that this species did not present a strong enough case for a national strategic plan or approach as a standalone species. As a dune weed, it was recommended that consideration is given to integrating action with sea spurge to support integrated action across Australia's coastal systems.

The following potential management actions have been considered as part of the NEWP detailed assessment process:

- 1) **On-ground management actions** – investigating improved chemical control options, integrated weed management techniques.
- 2) **Research and development for the species** – implementing exploratory biocontrol research; improving ecological knowledge of this species, including its invasion ecology, post-naturalisation invasion pathways, its ecological impacts (e.g. allelopathic impacts, soil impacts) and persistence dynamics following control; improving surveillance.
- 3) **Policy and regulation** – harmonising legislation and policy (i.e. nationally-consistent ban from sale/trade; spread prevention zones).
- 4) **Capacity building and awareness** – developing awareness material on impacts; sharing knowledge and disseminating consistent information to the public.
- 5) **Asset protection** – developing targeted weed plans for Glory lily; supporting progress of threat abatement actions; coordinating investments.

Groundsel bush (*Baccharis halmifolia*)



TOP LEFT: © Greg Egan, Kempsey Shire Council, TOP RIGHT: © The State of Queensland, BOTTOM LEFT: © Greg Egan, Kempsey Shire Council, BOTTOM RIGHT: Source: ABARES Current distribution map based on distribution records from the Atlas of Living Australia and additional distribution records supplied by the state and territory WWG as required

Summary of detailed assessment

Invasiveness

Groundsel bush invades both disturbed and undisturbed habitats. It has become invasive along the coast of NSW and QLD. It competes in native and introduced pastures and invades young forestry plantations. It outcompetes native plants and can suppress growth of native sedges. It is a prolific seed producer. Seeds can survive in soil for over 2 years. The species can spread via water (masses of seed have been seen on water bodies) and also spreads by wind and animals. Seeds can also adhere to machinery, and is a contaminant of soil, sand and gravel.

Current and potential distribution

Groundsel bush is currently present in NSW and QLD. Broad climatic suitability modelling shows it has a potential to establish in VIC, TAS, ACT, SA, WA and NT.

Beneficial uses

Groundsel bush has no known beneficial uses.

Current and potential negative impacts

Assessed as:

- Current high impacts at a regional – multiregional level (or medium at a multi-regional – national scale) for economic (market)¹ and environment^{3,4,5}.
- Potential high impact at a regional – multi-regional (or medium at multi-regional – national) level for economic (market)¹, environment^{4,5}, social^{6,7} and cultural^{8,9,10}.
- Potential high impact at a multi-regional-national level for economic (market)¹ and environment³.

¹ Impacts on yields and management inputs

³ Impacts on vegetation structure

⁴ Impacts on Australian biodiversity

⁵ Modification of ecosystem functions

⁶ Impacts on human health

⁷ Impacts on social amenity

⁸ Impacts on oral tradition, practice, ritual and knowledge

⁹ Impacts on subsistence, sustenance and craftsmanship resources

¹⁰ Impacts on heritage (place based)

Economic (market): Groundsel bush has some impact on grazing and forestry industries. It can reduce pasture productivity by forming woody stands that outcompete pasture and other desirable plant species for water and nutrients and can impede livestock movement. Though rarely consumed due to its low palatability, the plant is potentially toxic to livestock but no major illness or death in livestock is known. It can also affect forestry operations by overgrowing young seedlings. Windborne seeds can contaminate produce, but there are no records of market access impacts.

Environmental: Groundsel bush is a species that may impact coastal and wetland ecosystems. It can form monocultures, outcompete native vegetation and suppress herbaceous layers by introducing a new vegetation layer. This may lead to reduced species richness, change in microclimates and habitat degradation for native fauna. In melaleuca wetlands and saltmarshes, it may displace threatened plant species and diminishes the ecological value of these communities. Its dominance may affect insect diversity. Groundsel bush also may modify ecosystem functions by altering nutrient cycling, fire regimes, water availability and soil composition.

Social: Groundsel bush has airborne pollen and a seed pappus that is known to trigger hay fever and allergic reactions. The plant's dense thickets can shelter mosquito larvae, complicating control efforts. Groundsel bush also may spread into public parks and gardens, becoming a nuisance, which may diminish aesthetic value and recreational amenity.

Cultural: There is no direct published evidence for cultural impacts of Groundsel bush. However, its invasion into culturally significant places, such as Gaagal Wanggaan (South Beach) National Park, has the potential to degrade native flora and fauna central to storytelling, totemic species, and teaching.

Considered actions to improve management

National coordination would provide some benefit but is not essential. Not a strong case for national strategic plan. A national strategic plan or approach was not considered essential because actions

could be coordinated and implemented at lower scales in QLD and NSW (e.g. local, regional and state). No strong case for national coordination.

The following potential management actions have been considered as part of the NEWP detailed assessment process:

- 1) **On-ground management actions** – advancing research in timing of herbicide application, post-fire management (i.e. testing the effectiveness of applying herbicides to regrowth after burning).
- 2) **Research and development for the species** – conducting biocontrol research (understanding and improving the efficacy of existing biocontrol agents and their interactions with other control methods).
- 3) **Policy and regulation** – no further actions identified.
- 4) **Capacity building and awareness** – developing any new information (e.g. best practice manual), communication and awareness materials for the management of groundsel bush (this can happen at a state level, or collaboratively between NSW and QLD).
- 5) **Asset protection** – not applicable (already included in strategic planning).

Italian buckthorn (*Rhamnus alaternus*)



TOP LEFT: © Government of South Australia, TOP RIGHT: © Government of South Australia, BOTTOM LEFT: © Eyre Peninsula Landscape Board, BOTTOM RIGHT: Source: ABARES Current distribution map based on distribution records from the Atlas of Living Australia and additional distribution records supplied by the state and territory WWG as required

Summary of detailed assessment

Invasiveness

Italian buckthorn can establish in a wide variety of vegetation types, including disturbed and undisturbed habitats. It is an environmental weed of coastal dune scrub vegetation and coastal alkaline scrub vegetation, and in threatened Coastal Moonah Woodland community of VIC. It is fast growing, can germinate and establish under low light and is drought tolerant. Emodin present in Italian buckthorn fruit pulp has allelopathic properties. It is a prolific seed producer, and the seedbank persistence is greater than 5 years. It can be dispersed by natural means by birds, possums and foxes. It is commonly spread by people as it is widely cultivated as an ornamental plant and for hedging and occasional spread with garden waste and contaminated produce is likely.

Current and potential distribution

Italian buckthorn is currently present in NSW, QLD, SA, TAS, VIC and WA, with broad climatic suitability modelling indicating it has the potential to establish in ACT.

Beneficial uses

Italian buckthorn is not valued by any industry/stakeholders. Fruits are consumed by native birds, however these animals are not solely dependent on Italian buckthorn as a food source.

Current and potential negative impacts

Assessed as:

- Current medium impacts at a regional – multi-regional level for environment^{3,4,5}.
- Potential high impact at a regional – multi-regional (or medium at multi-regional – national) level for environment^{3,4,5}.

³ Impacts on vegetation structure

⁴ Impacts on Australian biodiversity

⁵ Modification of ecosystem functions

Economic (market): Italian buckthorn currently poses limited direct economic impacts to agriculture. It is a host of Polyphagous shot hole borer (*Euwallacea fornicatus*). Although it can host plant pathogens (Alfalfa mosaic virus and Olive knot disease) there is no evidence of this impact within Australia. There is no evidence of impact to quality of products or access to markets or product certification schemes.

Environmental: Italian buckthorn can form dense thickets in forest, woodland, and coastal ecosystems. The thickets may suppress native vegetation by shading out understorey and impeding regeneration. It is allelopathic, phytotoxic compounds can potentially suppress germination, survival and growth of native flora, impeding native species richness and abundance. An international study on emodin exposure in freshwater environments found emodin can contribute to declines in amphibian populations, but there is no evidence in Australia. Italian buckthorn has been identified as a threat to the EPBC Act listed Little Dip spider orchid (*Caladenia richardsiorum*) in the Adelaide Hills. It may also threaten the ecological character of the Budj Bim World Heritage Area in VIC. It alters the natural rate of litter decomposition and soil nitrogen content.

Social: Italian buckthorn has mildly toxic seeds and leaves, that may cause adverse effects if consumed in large quantities. The plant's dense infestations restrict access to walking tracks and reserves (e.g. Budj Bim World Heritage Area and Tyrendarra Nature Reserve in VIC). This may impact the aesthetic value of these reserves and ecotourism. Nearly all coastal reserves and public land in coastal areas of Western VIC have early invasions of Italian buckthorn. This is a concern to reserve stakeholders in the region.

Cultural: There is no published evidence of direct impacts of Italian buckthorn on First Nations cultural practices and heritage. Invasion in the Budj Bim World Heritage Area may be a risk to cultural practices. The dense infestations may obscure or degrade important sites.

Considered actions to improve management

A national strategic plan is not required as only one action (ban from sale) is requiring a coordinated approach. Considered lower priority. Could be a future project to progress a nationally consistent ban on sale and develop best practice guide to raise awareness and encourage early control.

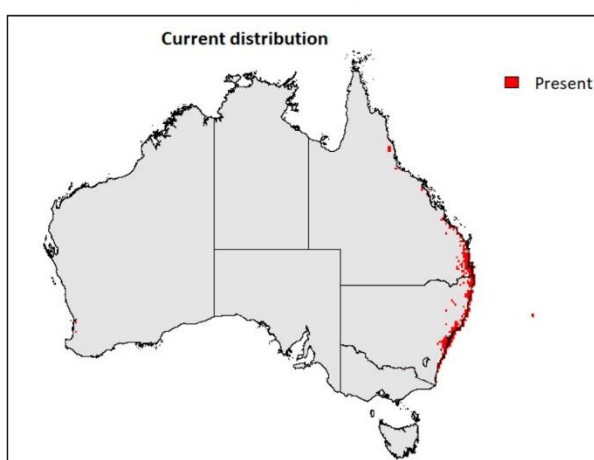
The following potential management actions have been considered as part of the NEWP assessment process:

- 1) **On-ground management actions** – improving chemical control (tools and options for sensitive habitats); developing Integrated Weed Management techniques (particularly for sensitive

habitats); undertaking a biocontrol prospect analysis; sharing information, techniques and data on effective control methods across jurisdictions.

- 2) **Research and development for the species** – expanding coordinated surveying and mapping; increasing biology/ecology knowledge (i.e., allelopathy, fire and other ecological interactions).
- 3) **Policy and regulation** – improving government/policy settings to prevent spread at state and national scale (species risk largely unknown in NSW/TAS/WA, yet high risk); reviewing existing legislation, guidelines and policies; developing a ‘grow me instead’ guide.
- 4) **Capacity building and awareness** – implementing knowledge/awareness solutions (based on existing and new information); developing national best practice guide to make knowledge/tools available nationally; sharing learnings across states to drive awareness and change; developing tools and information to prevent further spread and contain existing infestations.
- 5) **Asset protection** – documenting impacts on priority assets; developing a plan to prioritise asset protection actions and leverage investment.

Mickey mouse plant (*Ochna serrulata*)



TOP LEFT: © Terry Inkson, TOP RIGHT: © Terry Inkson, BOTTOM LEFT: © The State of Queensland, BOTTOM RIGHT: Source: ABARES Current distribution map based on distribution records from the Atlas of Living Australia and additional distribution records supplied by the state and territory WWG as required

Summary of detailed assessment

Invasiveness

Mickey Mouse plant can invade disturbed vegetation and the edges of intact areas, undisturbed native vegetation, rainforest, dry sclerophyll forest and riparian vegetation. It forms understorey thickets that shade out native plants. It is a prolific seed producer however seeds persist for a less than a year. Birds are the main dispersers of Mickey Mouse plant seed and occasional long-distance dispersal by water is likely. It can deliberately spread by people as it is grown as an ornamental and for hedges. It can spread accidentally in garden waste and contaminated produce (soil/mulch).

Current and potential distribution

Mickey mouse plant is currently present in NSW, NT, QLD and WA. Broad climatic suitability modelling shows it has a potential to establish in SA, TAS and VIC.

Beneficial uses

Mickey Mouse plant can be valued as an ornamental/garden plant however, it is not widely sold. It is not managed as a beneficial plant in any specific land use.

Current and potential negative impacts

Assessed as:

- Current high impacts at a regional – multi-regional (or medium at multi-regional – national) level for environment^{3,4}.
- Potential high impact at a regional – multi-regional (or medium at multi-regional – national) level for environment^{3,4,5}.

³ Impacts on vegetation structure

⁴ Impacts on Australian biodiversity

⁵ Modification of ecosystem functions

Economic (market): Mickey Mouse plant has minimal direct economic impacts on agricultural production or product quality. While there may be unreported impacts in some agricultural or pastoral areas where dense infestations occur in disturbed land, it is uncertain whether these exceed standard weed management practices.

Environmental: Mickey Mouse plant can form dense thickets that may dominate the shrub layer, shading out native understorey vegetation and preventing regeneration of ground-flora and overstorey species. Occurs in large range of ecosystems from rainforests, dry sclerophyll forests and riparian vegetation. It can impact habitat availability for native fauna, including birds, reptiles, and insects. There is no research on the impact of Mickey Mouse plant on native species other than anecdotal accounts of outcompeting natives and forming thickets. No direct evidence of impacts on ecosystem functions has been identified, however it may have the potential to disrupt soil and water cycling.

Social: There is no evidence of direct impacts to human health, as the species is not recorded as toxic, injurious or allergic. Indirect impacts on mental health may occur due to the challenges of managing infestations and the degradation of valued native vegetation among landholders and conservation volunteers. Although no direct evidence is available Mickey Mouse plant is likely to reduce social amenity by degrading bushlands and national parks, diminishing biodiversity, and lowering the recreational value of these environments.

Cultural: No published evidence was found for cultural impacts of Mickey Mouse plant. However, some cultural impacts are likely through loss of native species richness, abundance, and composition. This may degrade significant sites, displace culturally important species (including totem species), reduce access, and diminish cultural landscape values.

Considered actions to improve management

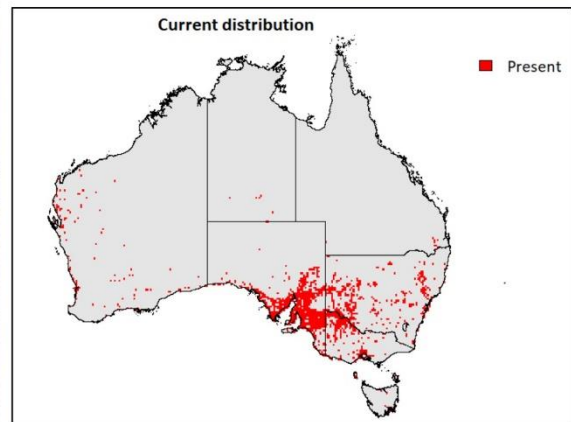
A national strategic plan or approach was not considered essential because actions could be coordinated and implemented at lower scales (e.g. local and regional). Not a strong case for national coordination. Potentially this species could be part of a future project to develop guidelines for restoring closed forest/riparian ecosystems.

The following potential management actions have been considered as part of the NEWP detailed assessment process:

- 1) **On-ground management actions** – no further actions identified.

- 2) **Research and development for the species** – advancing research into targeted herbicides that reduce off-target effects.
- 3) **Policy and regulation** – implementing a nationally-consistent ban from sale/trade.
- 4) **Capacity building and awareness** – increasing skills/tools for prioritising (control action).
- 5) **Asset protection** – implementing strategic planning across jurisdictions to protect priority assets at risk.

Onion weed (*Asphodelus fistulosus*)



TOP LEFT: © John Hosking, State of New South Wales, TOP RIGHT: © Sheldon Navie, BOTTOM LEFT: © Andrew Allen, iNaturalist, [CC BY 4.0](https://creativecommons.org/licenses/by/4.0/), BOTTOM RIGHT: Source: ABARES Current distribution map based on distribution records from the Atlas of Living Australia and additional distribution records supplied by the state and territory WWG as required

Summary of detailed assessment

Invasiveness

Onion weed spreads readily in disturbed areas and degraded native pastures. It is a poor competitor in well maintained pasture. It is a prolific seed producer. Seed bank persistence is for several years. Seed dispersal occurs via water, wind, animals, machinery, tilling, contaminated fodder.

Current and potential distribution

Onion weed is currently present in WA, NT, SA, QLD, VIC, NSW, ACT and TAS.

Beneficial uses

Onion weed has no known benefits.

Current and potential negative impacts

Assessed as:

- Current high impacts at a regional – multiregional (or medium impact at multi-regional – national) level for environment^{3,4}.
- Potential high impact at a multi-regional – national level for environment⁴.

³ Impacts on vegetation structure

⁴ Impacts on Australian biodiversity

Economic (market): Onion weed can invade cereal and horticultural crops (e.g., onions and garlic), where it may reduce both yields and product quality. In arid rangelands, it can pose a threat by being unpalatable to livestock and reducing grazing capacity by up to 75%. While management costs can be high, the weed does not generally dominate under sustainable farming systems. It can also cause product contamination in hay, seed lots, and raw materials such as sand and soil. Its spread through livestock ingestion (via dung) has led to movement restrictions and withholding periods for cattle. Infested properties may also experience reduced land values.

Environmental: Onion weed can invade coastal heathlands, and sometimes undisturbed woodlands and grasslands. It readily invades areas that have been overgrazed or disturbed. Major infestations are in eastern SA, western VIC and western NSW. It can form monocultures that may suppress native vegetation. Dense infestations have contributed to wombat malnutrition and disease due to ingestion of onion weed. It can alter soil chemistry (e.g., depleting nitrogen levels).

Social: Onion weed contains toxic compounds which have been linked to cases of dermatitis in humans. Spread in parks and coastal sites can diminish the aesthetic and recreational value of these areas.

Cultural: There is no published evidence of cultural impact. Infestations could interfere with fire practices, which are central to Indigenous Australian land management. Infestations may also degrade cultural sites by reducing the diversity of native under storey plants.

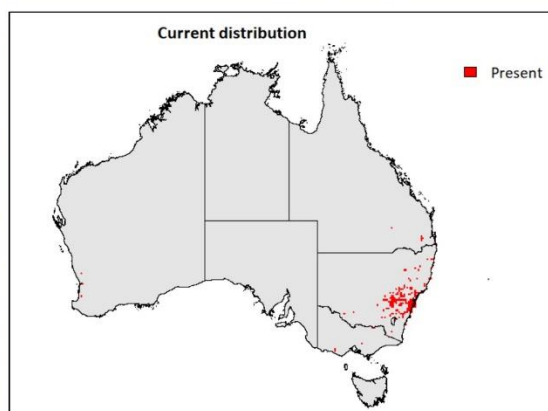
Considered actions to improve management

A national strategic plan or approach is not needed because actions could be coordinated and implemented at lower scales (e.g. local, regional and state). There are no strong benefits or need for national coordination.

The following potential management actions have been considered as part of the NEWP detailed assessment process:

- 1) **On-ground management actions** – advancing research and development to optimise herbicide approaches, including off target impacts and persistence in soil, optimise mechanical control and habitat manipulation approaches; sharing best practice techniques; pooling resources (funding).
- 2) **Research and development for the species** – conducting research into its biology; improving surveillance and mapping; sharing knowledge.
- 3) **Policy and regulation** – developing more targeted industry guidelines and policies; supporting containment strategies and early eradication in TAS and NT.
- 4) **Capacity building and awareness** – developing and disseminating best practice management guide; supporting communities of practice.
- 5) **Asset protection** – no further actions required (some important assets are at risk however they are already under protection).

Sticky nightshade (*Solanum sisymbriifolium*)



TOP LEFT: © Marita Sydes, Local Land Services, TOP RIGHT: © State of New South Wales, BOTTOM LEFT: © Marita Sydes, Local Land Services, BOTTOM RIGHT: Source: ABARES Current distribution map based on distribution records from the Atlas of Living Australia and additional distribution records supplied by the state and territory WWG as required

Summary of detailed assessment

Invasiveness

Sticky nightshade requires disturbance to germinate. It invades pastures, cultivated land, waterways and roadsides and on steep rocky slopes. It possesses some competitive traits, however, is not known as a transformer species in natural ecosystems. It is a prolific seed producer, with a resilient seed bank persisting about 5 years. It also regrows from rhizomes. It is dispersed by water, wind, wild vertebrates and domestic/farm animals. Accidental dispersal by people and vehicles is common, as well as being able to spread by contaminated produce and soil. Machinery can spread its rhizomes or root fragments.

Current and potential distribution

Sticky nightshade is currently present in ACT, NSW, QLD, VIC and WA, with broad climatic suitability modelling indicating it has the potential to establish in SA and TAS.

Beneficial uses

Sticky nightshade was used historically as an ornamental plant. It can also be used as a trap crop to protect potatoes from potato cyst nematode (*Globodera* spp.), although the frequency of this usage

in Australia is unknown. It could also be a vector of diseases of Solanaceae crop species (e.g. tomato, potato) so any benefit would not be without increasing risk of disease transmission.

Current and potential negative impacts

Assessed as:

- Current minor – medium impacts at a regional level for economic (market)^{1,2}, environment^{3,4,5}, social^{6,7} and cultural^{8,9,10}.
- Potential high impact at a regional – multiregional level for environment^{3,4}.

¹ Impacts on yields and management inputs

² Impacts on quality of products

³ Impacts on vegetation structure

⁴ Impacts on Australian biodiversity

⁵ Modification of ecosystem functions

⁶ Impacts on human health

⁷ Impacts on social amenity

⁸ Impacts on oral tradition, practice, ritual and knowledge

⁹ Impacts on subsistence, sustenance and craftsmanship resources

¹⁰ Impacts on heritage (place based)

Economic (market): Sticky nightshade may reduce agricultural productivity by outcompeting crops and pastures, depleting soil moisture, and interfering with harvesting. Yield losses of up to 50% have been reported in the NSW Central Tablelands. The plant contains toxic alkaloids harmful to livestock and can physically injure animals with its sharp prickles. It also serves as a host for diseases affecting potato and tomato crops. Management can be challenging due to its rapid growth, vegetative and seed-based spread, short life cycle, and moderate herbicide resistance. Limited control options often force farmers to spray infested areas at the expense of pasture development, and with high control costs. Future impacts are expected to increase as the species spreads. No evidence that Sticky nightshade affects the quality of agricultural products or market access.

Environmental: Sticky nightshade can form dense stands that potentially outcompete native plants. Although there is no published evidence, there is a potential for a decline in biodiversity. Dense infestations can prevent deep-rooted perennial native grasses from growing, which exacerbates soil erosion. It can also alter nutrient cycling primarily by modifying leaf litter decomposition.

Social: Sticky nightshade has some social impacts. It has sharp prickles that can cause skin punctures, abrasions, and minor allergic reactions, while its toxic alkaloids can cause poisoning if ingested. Rapid spread, difficult control, and high management costs can contribute to psychological stress for farmers. Dense infestations with thorns can restrict access, diminish the aesthetic and recreational value of natural areas.

Cultural: While there is no published evidence on direct cultural impacts of Sticky nightshade, its changes to landscape composition may disrupt the transfer of traditional ecological knowledge to younger generations. By altering native vegetation and reducing access to culturally significant sites and resources, it can impact connection to Country. Its rapid spread and sharp prickles may physically impede access to traditional food sources, hunting and gathering areas, and specific heritage sites, such as the repatriation site at Cowra.

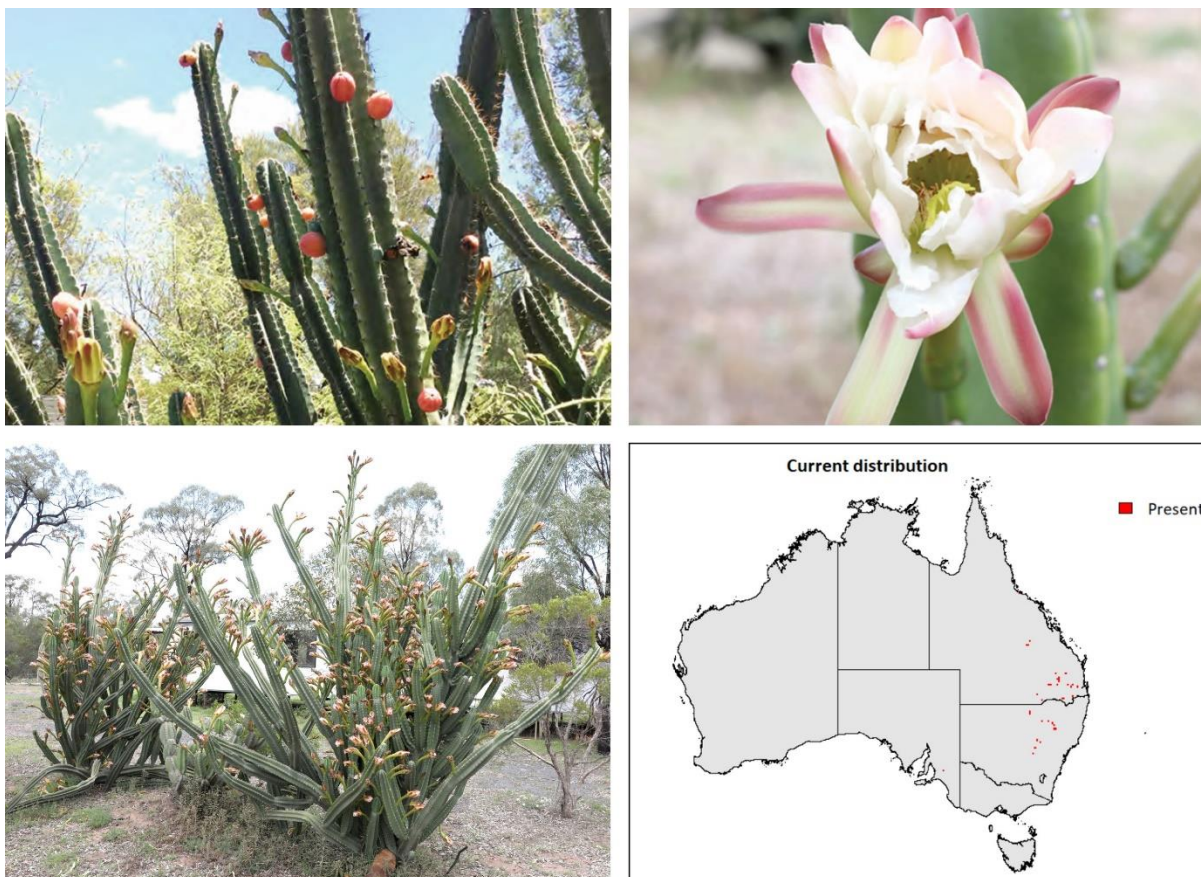
Considered actions to improve management

A national strategic plan or approach was considered not essential because actions could be coordinated and implemented at lower scales (e.g. regional and state). Did not present a strong case for national coordination as a standalone species. Recognition that contained in NSW and potential emerging agricultural weed. In the future could potentially be a project to raise awareness and explore movement controls to prevent spread.

The following potential management actions have been considered as part of the NEWP detailed assessment process:

- 1) **On-ground management actions** – aligning research efforts on alternative herbicides and improving timing and application coverage.
- 2) **Research and development for the species** – coordinating and supporting research and trials of a biocontrol agent; enhancing detection, surveillance and mapping capabilities through 3D model, structured surveys; promoting citizen science reporting to the Atlas of Living Australia.
- 3) **Policy and regulation** – harmonising legislation and policy (i.e. nationally consistent consideration of a ban from sale/trade and movement controls).
- 4) **Capacity building and awareness** – developing a best practice management guide to share knowledge; disseminating consistent messaging.
- 5) **Asset protection** – delimiting infestations in or near WHA and Ramsar wetlands.

Willows cactus (*Cereus uruguayanus*)



TOP LEFT: © The State of Queensland, TOP RIGHT: © The State of Queensland, BOTTOM LEFT: © The State of Queensland, BOTTOM RIGHT: Source: ABARES Current distribution map based on distribution records from the Atlas of Living Australia and additional distribution records supplied by the state and territory WWG as required

Summary of detailed assessment

Invasiveness

Willows cactus has naturalised in many locations in QLD forming large and dense infestations. It can invade undisturbed vegetation, including coastal habitats, rainforest, grasslands and disturbed and undisturbed woodlands. It competes with native vegetation, limiting the growth of small shrubs and groundcover species. It reproduces mostly by seed but can reproduce vegetatively given the right conditions. Propagules are occasionally dispersed by water. Wild vertebrates commonly spread seed via attractive fleshy fruit. Deliberate spread is common as it is an ornamental plant. Willows cactus is occasionally spread by contaminated produce.

Current and potential distribution

Willows cactus is currently present in NSW, QLD and SA, with broad climatic suitability modelling indicating it has the potential to establish in NT.

Beneficial uses

Willows cactus is a popular ornamental plant in QLD. Gardeners, landscapers and enthusiasts find Willows cactus beneficial to grow due to low maintenance and drought tolerance. Its flowers are pollinated by bees and night-flying insects (aiding pollinator populations) and its fruit are edible to birds (aiding bird populations). It is not managed in any specific land use for its beneficial use.

Current and potential negative impacts

Assessed as:

- Current medium impacts at regional – multi-regional level for economic (market)¹, environment^{3,4,5} and social⁷.
- Potential high impact at a multi-regional-national level for economic (market)¹, environment³ and social⁷.

¹ Impacts on yields and management inputs

³ Impacts on vegetation structure

⁴ Impacts on Australian biodiversity

⁵ Modification of ecosystem functions

⁷ Impacts on social amenity

Economic (market): Willows cactus has economic impacts in QLD and northern NSW. Dense thickets of Willows cactus can invade grazing lands, reduce pasture productivity and increase land management costs. Its dense, spiny growth can physically harm livestock, deters livestock from grazing, leading to lower livestock carrying capacity on infested land. Control efforts are labour-intensive and costly, involving repeated herbicide applications and extensive monitoring. Although direct evidence is lacking it could potentially contaminate agricultural products and equipment. Its spiny nature could theoretically contaminate crops or damage wool and hides.

Environmental: Willows cactus may impact the environment by forming dense thickets that outcompete native plants. It can spread in a wide range of habitats such as dry forests, woodlands, riparian zones, and disturbed landscapes. It may alter vegetation structure by forming dense, tall thickets that reduce light, water, and nutrient availability, leading to monocultures that dominate both the vertical and horizontal space, affecting habitat and shelter for other species. No current records of severe biodiversity impacts. Its spiny structure may impede wildlife movement, affecting local ecological interactions. It may alter fire regimes, and nutrient cycling.

Social: Sharp spines of the cactus may cause physical injuries, particularly to those undertaking control measures but not considered to have long-lasting effects. Handling cactus tissue may cause skin or respiratory irritation in sensitive individuals. Willows cactus may lead to ongoing psychological stress among affected communities, landholders reporting frustration and helplessness due to the rapid spread and challenges associated with on-ground control. Dense thickets may obstruct paths and property access, leading to increased risk of falls or entanglement, reduce aesthetic and functional value of recreational areas. Its invasive growth may damage infrastructure and buildings. Large infestations may also diminish tourism and community wellbeing in affected regions.

Cultural: There is no published evidence of direct cultural impacts of Willows cactus. However, by analogy with other invasive cacti, the dense growth of Willows cactus could hinder access to culturally significant sites that are used for generational knowledge transfer, oral traditions arts, rituals, ceremonies, and knowledge systems. It could displace native plants that are used for food, and medicine. Elders could lose access to the natural landmarks, in areas invaded by this species.

Considered actions to improve management

A national strategic plan or approach is not considered essential because actions could be coordinated and implemented in NSW and QLD at lower scales (e.g. regional and state) and some are already in place. Not a strong case for national coordination.

The following potential management actions have been considered as part of the NEWP detailed assessment process:

- 1) **On-ground management actions** – advancing innovation on mechanical control options, testing efficacy of herbicide, biological control, habitat manipulation; developing and sharing best practice management guidelines.
- 2) **Research and development for the species** – improving surveillance and mapping (i.e., ground surveys, remote sensing); understanding the species' ecology to fill knowledge gaps; coordinating joint monitoring between NSW/QLD.
- 3) **Policy and regulation** – harmonising legislation for containment; coordinating local eradication programs.
- 4) **Capacity building and awareness** – developing a centralised portal for best practice; improving industry guidelines for management; providing training if new management techniques found.
- 5) **Asset protection** – identifying any assets at risk.

Appendix D: Species nominated

Table 6 List of nominations

Common name	Scientific name
African lovegrass	<i>Eragrostis curvula</i>
Amazon frogbit	<i>Limnobium laevigatum</i>
Arum lily	<i>Zantedeschia aethiopica</i>
Blue periwinkle	<i>Vinca major</i>
Buffel grasses (group)	<i>Cenchrus</i> spp. • <i>C. ciliaris</i>* • <i>C. pennisetiformis</i> • <i>C. setiger</i>
Calotrope (Rubber bush)	<i>Calotropis procera</i>
Camphor laurel	<i>Cinnamomum camphora</i>
Coast beach daisy	<i>Arctotheca populifolia</i>
Coral creeper	<i>Barleria repens</i>
Cockspur coral tree	<i>Erythrina crista-galli</i>
Common mother-of-millions	<i>Bryophyllum delagoense</i> **
Fountain grass	<i>Cenchrus setaceus</i>
Easter cassia	<i>Senna pendula</i> var. <i>glabrata</i>
Geraldton carnation weed	<i>Euphorbia terracina</i>
Glory lily	<i>Gloriosa superba</i>
Golden crownbeard	<i>Verbesina encelioides</i>
Groundsel bush	<i>Baccharis halimifolia</i>
Harrisia (group)	<i>Harrisia</i> spp. • <i>H. martinii</i>* • <i>H. pomanensis</i> (syn. <i>H. regelii</i>) • <i>H. tortuosa</i>
Heaths (group)	<i>Erica</i> spp. • <i>E. arborea</i> • <i>E. baccans</i> • <i>E. lusitanica</i>* • <i>E. scoparia</i>
Italian buckthorn	<i>Rhamnus alaternus</i>
Mickey Mouse plant	<i>Ochna serrulata</i>
Navua sedge	<i>Cyperus aromaticus</i>
Neem tree	<i>Azadirachta indica</i>
Wilding olive	<i>Olea europaea</i> ***
Onion weed	<i>Asphodelus fistulosus</i>
Ox-eye daisy	<i>Leucanthemum vulgare</i>

NEWP assessment report

Privets (group)	<i>Ligustrum</i> spp. • <i>L. lucidum</i>* • <i>L. sinense</i>
Rat's tail grasses (group)	<i>Sporobolus</i> spp. • <i>S. africanus</i> • <i>S. fertilis</i> • <i>S. jacquemontii</i> • <i>S. natalensis</i> • <i>S. pyramidalis</i>*
Sea spurge	<i>Euphorbia paralias</i>
Siam weed	<i>Chromolaena odorata</i>
Singapore daisy	<i>Sphagneticola trilobata</i>
Sticky nightshade	<i>Solanum sisymbriifolium</i>
Tropical soda apple	<i>Solanum viarum</i>
Wandering trad	<i>Tradescantia fluminensis</i>
Willows cactus	<i>Cereus uruguayanus</i>

* Assessed as the lead species for a nominated group of closely-related weeds.

** Note that Mother of thousands (*Bryophyllum daigremontianum*) and Hybrid mother-of-millions (*B. x houghtonii*) were nominated alongside Common mother-of-millions (*B. delagoense*) but were not accepted as only Common mother-of-millions (*B. delagoense*) had been submitted at the EOI stage. Nominated species were not accepted where there was no approved EOI.

*** Note that European olive (*Olea europaea* subsp. *europaea*) and African olive (*O. europaea* subsp. *cuspidata*) were nominated, but Wilding olive (*O. europaea*) was assessed as a single species during the detailed assessment, rather than at the subspecies level.

Appendix E: Probity and use of information

Probity

Probity principles require the conduct of open, fair, accountable and consistent processes. The probity principles applied through this process aimed to assure all parties of the integrity of the decision-making process. The probity principles included:

- honesty and impartiality
- identification and management of conflicts of interest
- appropriate security and confidentiality arrangements
- consistency, fairness and due diligence
- transparency
- maintaining an appropriate audit trail
- compliance with legal and policy frameworks.

Use of information

[Guide to nominating a nationally significant weed](#) specified that records obtained through the nomination and any subsequent requests for information in relation to the process will be retained and only used for the purposes of the nomination process, including the consideration of EOIs and the assessment of nominations.

Nominating organisations may choose to release their nomination to others at their own discretion.

In administering this process, the Department of Agriculture, Fisheries and Forestry disclosed information (including confidential information) in connection with either an EOI or nomination to assessors, committee members or other third parties for the purposes of this process, provided those persons have agreed to not disclose any confidential information included in those documents. The department also required any person involved with the assessment of an EOI or nomination to sign a confidentiality agreement. These administrative arrangements supported the probity principles.

Glossary

Term	Definition
ABARES	Australian Bureau of Agricultural and Resource Economics and Sciences – a division of the Department of Agriculture, Fisheries and Forestry
assessors	Individuals who applied the eligibility criteria, preliminary assessment or detailed assessment
detailed assessment	The second stage of assessment, limited to approximately 30 nominations that proceed beyond preliminary assessment
EPBC Act	Environmental Protection and Biodiversity Conservation Act 1999
EIC	Environment and Invasives Committee
eligibility criteria	The criteria applied to determine EOI eligibility
EOI	Expression of interest
EPDNS	Established Pests and Diseases of National Significance
established weed	An invasive, naturalised plant whose spread and persistence has made it technically unfeasible to be eradicated from Australia
group members	The organisations who supported the EOI or nomination with the lead organisation
KTP	Key Threatening Processes
lead organisation	The organisation who submitted the EOI form or nomination form
lead organisation primary contact	The person nominated by the lead organisation as the primary contact for the EOI or nomination (to receive information and respond to enquires)
lead organisation secondary contact	The person nominated by the lead organisation as the secondary contact for the EOI or nomination (to receive information and respond to enquires)
NBC	National Biosecurity Committee
NEWP	National Established Weed Priorities
NEWP SG	National Established Weed Priorities Steering Group
NEWAL	National Established Weeds Action List
nomination	The supporting information on the weed or group of weeds for consideration in the assessment
preliminary assessment	Stage 1 of the assessment, applied to all nominations to determine those that proceed to detailed assessment
preliminary assessment criteria	The preliminary assessment criteria that were applied to determine merit of the nomination to proceed to detailed assessment
project team	Department of Agriculture, Fisheries and Forestry and state and territory government staff responsible for administration of the NEWP process
WINS	Weed Issues of National Significance
WoNS	Weeds of National Significance
WWG	Weeds Working Group (of EIC)