



National Environmental Biosecurity Response Agreement 5-year review

Joint submission by
Invasive Species Council, Australian Land Conservation
Alliance, Australian Wildlife Conservancy, Biodiversity
Council, Bush Heritage Australia, Plant Conservation Australia
and Queensland Conservation Council

April 2026

Document details

Invasive Species Council, Australian Land Conservation Alliance, Australian Wildlife Conservancy, Biodiversity Council, Bush Heritage Australia, Plant Conservation Australia and Queensland Conservation Council. 2026. Submission in response to the National Environmental Biosecurity Response Agreement 5-year review.

About the Invasive Species Council

The Invasive Species Council was formed in 2002 to advocate for stronger laws, policies and programs to keep Australian biodiversity safe from weeds, feral animals, exotic pathogens and other invaders. It is a not-for-profit charitable organisation, funded predominantly by donations from supporters and philanthropic organisations.

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1 Introduction

Invasive species are a leading cause of biodiversity loss and species extinction in Australia and cost an estimated \$25 billion to manage each year.¹ Effective emergency responses to environmental incursions are central to Australia meeting its international obligations to halt extinctions of native species and reduce the introduction and establishment of invasive alien species.² Prevention and early intervention are also far more cost-effective than long-term management: a dollar invested in an effective emergency eradication response achieves more benefit than a dollar spent managing an established invader.

The Invasive Species Council, Australian Land Conservation Alliance, Australian Wildlife Conservancy, Biodiversity Council, Bush Heritage Australia, Plant Conservation Australia and the Queensland Conservation Council therefore welcome the opportunity to respond to the second, 5-year review of the National Environmental Biosecurity Response Agreement (NEBRA) – the intergovernmental agreement between the Commonwealth, states and territories that establishes the national framework for responding to environmentally significant pest and disease incursions.

Our submission addresses responses to all incursions of invasive species with potential national environmental significance – whether considered under NEBRA, under industry deeds, or under a NEBRA-like arrangement. We refer to these agreements collectively as the 'environmental biosecurity response framework'. This scope reflects a fundamental reality that the review should not evade: NEBRA does not operate in isolation, and its shortcomings cannot be remedied without also attending to how it interacts with – and is regularly displaced by – the industry response frameworks that sit alongside it. The next section of this submission provides an overview of that framework and the structural challenges it faces.

This submission addresses the questions in the review's public discussion paper and takes the opportunity to explore other critical questions. These additional questions are located at the beginning of the relevant sections, which are listed below:

- Australia's environmental biosecurity response framework
- funding environmental biosecurity responses
- transparency and accountability
- First Nations peoples and community involvement
- governance arrangements
- custodian arrangements
- preparedness and surveillance

¹ Bradshaw CJA, Hoskins AJ, Haubrock PJ, Cuthbert RN, Diagne C, Leroy B, Andrews L, Page B, Cassey P, Sheppard AW, Courchamp F, 2021, Detailed assessment of the reported economic costs of invasive species in Australia. In: Zenni RD, McDermott S, García-Berthou E, Essl F (Eds) The economic costs of biological invasions around the world. *NeoBiota* 67: 511-550. <https://doi.org/10.3897/neobiota.67.58834>

² Target 4 of the Kunming-Montreal Global Biodiversity Framework (GBF) commits signatories to halt species extinctions, and protect genetic diversity. GBF Target 6 commits signatories to reducing the introduction of invasive alien species by 50% and minimising their impact. These targets are reflected in Objectives 6 and 7 of [Australia's Strategy for Nature 2024–2030](#).

- incursion reporting and the interaction between the NEBRA and industry deeds
- the Incident Definition phase
- the Emergency Eradication Response phase
- the Transition to Management phase
- review and evaluation.

A full list of our recommendations can be found below.

Our overarching goal is a framework that is genuinely fit for purpose – one designed around the nature and scale of Australia's environmental biosecurity challenges rather than inherited from a model built for a different context, and one that can be held to account for how well it meets them.

List of recommendations

Funding emergency environmental biosecurity responses

Recommendation 1: Remove the \$5 million funding limit from NEBRA.

Transparency and accountability

Recommendation 2: For environmental biosecurity responses under NEBRA, EPPRD and EADRA, require publication of at least the following – including, for decisions and recommendations, the evidence relied on (and its sources) and the reasoning applied:

- all National Management Group decisions on whether to proceed with an eradication response
- all consultative committee recommendations
- operational guidelines for each key decision point
- comprehensive annual reports (with financial statements) on all activity under the agreement – including incidents that did not proceed to a national response
- summaries of reviews of response plan implementation by combat jurisdictions

Recommendation 3: Expand the scope of the Inspector-General of Biosecurity role to enable independent reviews of eradication responses across all 3 emergency response frameworks, including periodic review of a representative sample of significant environmental biosecurity response decisions and responses (such as those above a spending threshold, unsuccessful responses, or decisions not to respond).

First Nations and community involvement

Recommendation 4: Mandate the creation of a permanent stakeholder advisory committee – comprising First Nations representatives, environmental NGOs, NRM bodies, and local government – to be consulted on all decisions and recommendations concerning environmental incursions by the NBMCC or, where relevant, consultative committees established under industry agreements. This committee should also provide advice on selecting local representatives for specific incursion responses.

Recommendation 5: The NEBRA custodian work with First Nations stakeholders to co-develop culturally appropriate criteria for decisions, including on national significance, and involvement in and communications about responses.

Governance arrangements

Recommendation 6: Increase the representation of environmental department officials on the NBMCC and other consultative committees responding to environmental incursions. Require environment departmentals to be represented on the NMG and consider the option of co-chairs.

Recommendation 7: Limit the voting membership on the NMG to parties contributing to a cost-shared response. Jurisdictions not potentially affected by a pest or a disease or not intending to contribute to a cost-shared response should be non-voting members for decisions relating to the incursion.

Recommendation 8: Require NBMCC advice to reflect the individual positions of parties rather than consensus, so that the full range of views informing a recommendation is visible.

Custodian arrangements

Recommendation 9: Develop and adopt a formal description of the NEBRA custodian role that includes the following functions:

- administering the NEBRA, including efficiently and effectively coordinating the processes, and managing agreed funding mechanisms
- coordinating with the custodians of EPPRD and EADRA in respect of incursions with significant environmental impacts
- supporting public reporting of NEBRA, EPPRD and EADRA decisions, responses and outcomes relevant to environmental incursions
- building and maintaining relationships with non-government stakeholders, environmental agencies and First Nations representatives and supporting their engagement with relevant stakeholder advisory groups
- contributing to the development and maintenance of preparedness plans and contingency plans for priority environmental invasives
- supporting training and induction for those involved in environmental biosecurity responses
- driving the evaluation and adaptive improvement of the framework over time, including through reviews of NEBRA and other industry deeds

Recommendation 10: Appoint the Australian Chief Environmental Biosecurity Officer to the expanded NEBRA custodian role with the aim of improving transparency, stakeholder engagement and preparedness in environmental biosecurity responses as core functions.

Preparedness and surveillance

Recommendation 11: As a high priority, strengthen Australia's preparedness to respond effectively to new environmental incursions by:

- (a) maintaining a comprehensive and contemporary public database of potential environmental invaders that may warrant a rapid response if they arrive in Australia
- (b) accelerating the development of response preparedness plans and associated plans such as the Invasives Plan
- (c) identifying priority surveillance targets and working with surveillance programs (federal and state/territory government, existing landholder networks and alliances and citizen science programs) to embed environmental priorities.

Recommendation 12: Adopt a standardised format for preparedness plans developed under NEBRA, EPPRD and EADRA, requiring explicit consideration of environmental impacts in every plan regardless of which agreement applies.

Incursion reporting and the interaction between NEBRA and industry deeds

Recommendation 13: Amend NEBRA to require all new detected incursions to be reported to the centralised public reporting point and reviewed by the Australian Chief Environmental Biosecurity Officer to determine, in consultation with relevant experts and stakeholders, which are EEPD incidents requiring further action under the framework.

Recommendation 14: When an industry deed is triggered for an incursion with significant environmental impacts, ensure the relevant consultative committee includes environmental experts, engages with the NEBRA stakeholder committee and assesses environmental impacts using NEBRA criteria. Alternatively, establish a formal mechanism for reconsidering environmentally significant incursions under NEBRA when a response under an industry deed has been declined or abandoned.

Recommendation 15: Coordinate the NEBRA and EPPRD reviews to ensure the agreements are updated to be complementary, with consistent terminology and criteria for environmental impacts, and aligned requirements for benefit-cost analysis, technical feasibility and environmental expertise across both frameworks. Apply any changes to the EADRA as required.

Incident Definition phase

Recommendation 16: Require that decisions relating to environmentally significant incursions under NEBRA, EADRA and EPPRD apply ecological risk frameworks that incorporate:

- consideration of comprehensive ecological consequences, including complex species interactions and cumulative impacts
- the precautionary principle, with conservative risk assumptions applied in proportion to the irreversibility of potential harm
- inter-generational equity, recognising that ecological losses can be permanent and that obligations to future generations should be weighed alongside present costs
- ecological timescales, ensuring that risk assessment and investment decisions account for the long lag times and extended invasion dynamics characteristic of natural systems.

Recommendation 17: Develop and publish guidelines on when and how the Incident Definition Response will be applied.

Recommendation 18: Review whether the technical feasibility criteria are appropriately calibrated for environmental incursions – ensuring they enable responses to incursions for which the feasibility of eradication is uncertain but testable and facilitate adaptive responses.

Recommendation 19: Remove the requirement that a response be assessed as cost-beneficial before it can proceed for incursions of environmental significance. Replace it with a requirement to document known costs and identified benefits – including qualitative, cultural and ecological benefits.

Recommendation 20: Require the consultative committees considering incursions with significant environmental impacts to seek independent scientific and technical advice in making assessments and recommendations on whether to initiate a response and in the development of response plans. The expert advice, the identity of experts consulted and the reasoning applied by the committee should be published as a matter of course.

Emergency Eradication Response phase

Recommendation 21: In conjunction with Jobs and Skills Australia and jurisdictions, the custodian should develop workforce skills profiles and plans that support environmental biosecurity response workforce needs.

Recommendation 22: The NEBRA custodian, in cooperation with Plant Health Australia, Animal Health Australia, Wildlife Health Australia and relevant scientific and ecological experts, develop and maintain a standardised training program for environmental biosecurity emergency response workforces. The custodian should also coordinate with jurisdictions to ensure appropriate workforce plans support timely and effective emergency responses.

Recommendation 23: Conduct regular simulations and exercises based on realistic incursion scenarios – including for priority species on the EEPL – as a standard component of environmental biosecurity preparedness, with participation extended to non-government organisations expected to contribute to or support responses.

Recommendation 24: Develop and publish guidelines on response plan development and variation, distinguishing between strategic decisions requiring NMG approval and operational decisions within the discretion of the combat state, with defined funding thresholds and tolerances for operational adjustment.

Recommendation 25: Publish guidelines on the criteria and thresholds that will trigger feasibility and risk reviews during an ongoing response, including budget review points and defined tolerances for assessing whether a response remains on track.

Recommendation 26: Ensure it is clarified that Clarify whether the eligible costs framework permits expenditure on research to develop and test new control methods as part of a jointly funded response, including during the Transition to Management phase, and ready access to relevant data. Amend NEBRA to explicitly allow such funding and data access if necessary.

Recommendation 27: Include a pre-approved contingency budget as a standard component of each response plan, with defined parameters for its use.

Transition to Management phase and other post-eradication management

Recommendation 28: Develop guidelines on when to decide to transition to management and cease eradication for environmental incursions. The guidelines should cover decision-making criteria, expert and community consultation (including First Nations communities), surveillance requirements, stakeholder communications, and preparedness of potentially affected jurisdictions.

Recommendation 29: Remove the 12-month cap on the Transition to Management phase and replace it with a duration based on an assessment of public benefit. Modified cost-sharing arrangements that do not require full participation of all jurisdictions could apply to extended phases.

Recommendation 30: Extend NEBRA's scope beyond eradication to provide for nationally coordinated, cost-shared containment for environmental incursions where containment is in the public interest. If this cannot be accommodated within NEBRA, an equivalent supplementary agreement should be developed.

Recommendation 31: Allow for a return to an emergency eradication response following a Transition to Management phase, where new research, new control methods, or a revised benefit-cost analysis make eradication feasible or warranted.

Review and evaluation

Recommendation 32: Require combat states or territories to prepare post-response evaluation reports, and provide the option for the NMG to commission an independent expert evaluation of responses.

Recommendation 33: Commission an independent review of lessons learned from emergency eradications to date, including case studies such as advances in invasive ant responses and what conditions enabled this, and a review of the relevance of island eradication evaluations to the emergency response context.

2 Australia's environmental biosecurity response framework

This section addresses discussion paper questions 22, 24 and 25.

Australia's cooperative framework for emergency biosecurity responses – comprising NEBRA and two industry deeds, the Emergency Animal Disease Response Agreement (EADRA) and Emergency Plant Pest Response Deed (EPPRD) – is one of the most visionary elements of national biosecurity policy. Underpinned by commitments from all federal, state and territory governments, with pre-agreed funding formulas and shared governance, the framework has enabled outcomes that would have been impossible through ad hoc or unilateral action.

As a result, Australia is now free of several invasive species that would otherwise be causing extensive environmental, economic and social damage. Australia is a global leader in ant eradications, with successful or ongoing campaigns against red imported fire ants, electric ants, browsing ants, African black sugar ants and others. Every known fire ant incursion other than the first has been eradicated. These achievements have not come easily or cheaply, but each response has built institutional capacity, refined methods and strengthened the case for acting early rather than accepting permanent establishment. These programs deserve recognition as among Australia's most important conservation initiatives, yet remain poorly understood even within the conservation community.

The challenges facing environmental biosecurity are intensifying. Accelerating trade and travel continue to expand potential pathways for new incursions, while climate change is altering species distribution and changing the conditions under which invasive species establish and spread. When prevention fails at the border –and some level of failure is inevitable – NEBRA and other deeds are the primary initial mechanism for national response. A framework that is under-resourced, structurally misaligned or inadequately governed will be overwhelmed.

Environmental biosecurity responses also face distinctive political and resourcing challenges. Unlike responses for agriculture – which can mobilise commercial stakeholders and draw on industry co-investment – they typically depend entirely on public funding and find it more challenging to demonstrate economic losses. Against other urgent funding priorities, persuading ministers and treasurers of the case for eradication over long-term control is a perennial challenge, compounded by long time horizons for environmental impacts, large information gaps, the absence of a commercial constituency advocating for action, and potentially also declining social licence for some management tools.

We believe Australia's emergency environmental biosecurity response framework should be ambitious and squarely in the public interest – for our extraordinary and unique wildlife, First Nations peoples and their cultures, people's wellbeing, and future generations. Australia should pursue a consistent, best-practice, ecologically informed approach to all significant environmental incursions, regardless of whether they fall under NEBRA or an industry deed. It should be transparent, accountable and collaborative, with a culture of continuous improvement, integrated with and well supported by other elements of the biosecurity system – particularly prevention and surveillance. And it should be constructive about failure, capturing and communicating both achievements and lessons learned.

That vision is only partly being realised. NEBRA was developed some years after the industry deeds and was, at its inception, heavily shaped by that agricultural model – inheriting assumptions, structures and parameters designed for a different context.

In agriculture, the assets at risk are replaceable: when a crop is lost, another may be planted; when a herd is lost, it can be rebuilt. In contrast, when a species is driven to extinction or an ecosystem fundamentally altered, that loss is permanent. Environmental incursions affect systems that are highly complex, often poorly understood, and difficult to monitor. The benefits of eradication are difficult to quantify and challenging to appreciate. The stakeholders whose interests are at stake – First Nations peoples, environmental organisations, land managers, the broader public – do not have the same capacity to contribute financially to responses as industry bodies do. And the consequences of failure are, in most cases, irreversible.

Together, the NEBRA, EPPRD and EADRA are crucial for protecting Australia's rich and unique wildlife and ecosystems. To achieve their potential, these deeds need a shared purpose-built framework to address the distinctive challenges of environmental invaders.

3 Funding environmental biosecurity responses

This section addresses discussion paper question 15.

A \$5 million annual funding limit applies to eligible costs under national NEBRA responses. While this limit has not been reached in practice, exceeding it would require unanimous ministerial approval across all jurisdictions – a serious political hurdle with no equivalent in the industry agreements.

The rationale for this limit is unclear. It may have been set to manage budget risk at a time when the nature and scale of potential NEBRA responses were not well understood. If so, subsequent experience justifies revisiting it. Environmental incursions affecting natural systems are often larger in geographic scope, harder to eliminate and slower to resolve than agricultural equivalents – as illustrated in the extreme by red imported fire ants. Given that funding for each eradication is subject to approval by all affected parties, an annual ceiling adds no meaningful fiscal discipline – it functions only as an impediment, and as a signal that public interest eradications are of lesser importance than those managed under industry deeds.

The practical consequences are potentially serious – if the cap causes an underfunded response to fail or prevents one from being attempted. The long-term costs of that outcome, in ecological damage, ongoing management expenditure and lost ecosystem services, will in most cases vastly

exceed the cost of an adequate initial response. Where the assets at risk are irreplaceable, fiscal reluctance is reckless. We strongly recommend the funding cap be removed.

Recommendation 1: Remove the \$5 million funding limit from NEBRA.

4 Transparency and accountability

This section addresses discussion paper questions 1, 2, 13, 14, 20, and 21. It also addresses the question:

- *How accountable to the public are decision-makers under the deeds and how can accountability be optimised?*

The environmental biosecurity response framework operates almost entirely beyond public view. Because of this, few environmental stakeholders would know what has been achieved or have gained confidence in Australia's response capacity due to operation of the NEBRA. Stakeholders would be aware of the programs for red imported fire ants and polyphagous shot hole borers – but neither of these have been conducted under the NEBRA.

Decisions about whether to initiate, continue or cease emergency responses to environmentally significant incursions are made without public disclosure of the evidence considered, the reasoning applied, or the outcome reached – beyond brief online summaries of 'incidents resolved' and current incursions (and, more recently, the list annexed to the Discussion Paper of all incidents considered under NEBRA). These sources give no account of how national significance, feasibility or benefit:costs were assessed, what scientific evidence was weighed, and which experts were consulted.

This opacity is difficult to justify and threatens credibility. NEBRA is funded entirely, and the EPPRD and EARDA are funded primarily, by public money to protect nationally significant (often irreplaceable) public assets. Almost all other government bodies and spending programs are subject to routine public reporting requirements. Activities under these agreements are not. That public insight into one of Australia's core environmental protection mechanisms must be pursued through FOI requests – a process that is costly, slow and subject to significant discretion – is a measure of how far current practice falls short of appropriate governance standards.

Without meaningful public information including about financial contributions, it is difficult or impossible for non-government stakeholders – environmental organisations, First Nations groups, researchers, and the broader community – to assess whether the environmental biosecurity response framework is working, to provide informed feedback, or to contribute to building the social licence that ambitious and expensive eradication programs depend upon. The decision by the EPPRD consultative committee that eradication of the polyphagous shot hole borer was not technically feasible is a case in point: the lack of public information has given rise to concerns that the decision was not justified or was due to poor response management.

Public understanding of and confidence in eradication programs are also undermined by a lack of published guidelines – e.g. on the thresholds for referral and assessment methods – and a lack of requirement for the National Biosecurity Management Consultative Committee (NBMCC) or their equivalents under other deeds to seek external scientific or technical advice. Although it may be

reviewed for efficiency and financial reasons, there is no requirement for a response plan to be subject to independent expert scrutiny. These issues can compromise decision quality and external accountability.

Accountability is also compromised by the lack of processes for independent scrutiny of decisions (other than financial and efficiency audits), including to identify ways to improve future eradications.

Publishing decision records – setting out evidence, methodology and reasoning – would build public confidence and enable constructive feedback. Where time permits, releasing draft decisions for peer review would further strengthen decision-making. To strengthen accountability, all environmental biosecurity response agreements should require periodic independent review of a representative sample of significant decisions and steps leading up to them, with findings made public. The Inspector-General of Biosecurity's role could be expanded to conduct such reviews.

Recommendation 2: For environmental biosecurity responses under NEBRA, EPPRD and EADRA, require publication of at least the following – including, for decisions and recommendations, the evidence relied on (and its sources) and the reasoning applied:

- all National Management Group decisions on whether to proceed with an eradication response
- all consultative committee recommendations
- operational guidelines for each key decision point
- comprehensive annual reports (with financial statements) on all activity under the agreement – including incidents that did not proceed to a national response
- summaries of reviews of response plan implementation by combat jurisdictions

Recommendation 3: Expand the scope of the Inspector-General of Biosecurity role to enable independent reviews of eradication responses across all 3 emergency response frameworks, including periodic review of a representative sample of significant environmental biosecurity response decisions and responses (such as those above a spending threshold, unsuccessful responses, or decisions not to respond).

5 First Nations and community involvement

This section addresses discussion paper questions 4, 9, 12 and 19.

NEBRA's governance arrangements do not reflect the breadth of interests at stake in environmental biosecurity decisions. Although NEBRA was established to address environmental biosecurity – a domain in which most benefits are public and almost all funding is government-sourced – it was modelled on the industry deeds, which are built around a fundamentally different logic: that those who contribute financially to a response earn standing in its governance. Transplanted into an environmental context, this logic produces a framework in which the organisations representing environmental values – NGOs, research institutions, NRM bodies, First Nations land managers and other community groups – have no pathway to meaningful participation, because they cannot contribute in the financial terms the framework recognises.

Two representation gaps are especially significant: the absence of any meaningful involvement of First Nations people and non-government environmental organisations.

The current framework provides no formal trigger for consideration of First Nations perspectives, no mandatory consultation by the National Management Group (NMG) or consultative committees, and no requirement that national significance assessments account for culturally significant species, places, songlines or practices. The national significance criteria in NEBRA are unlikely to capture impacts on culturally significant species or places unless they are independently listed under the EPBC Act, while EPPRD and EADRA lack any criteria to consider cultural impacts at all. Engagement with First Nations peoples is also not currently embedded in the development or review of response plans, meaning responses do not benefit from their often detailed knowledge of ecosystems and landscapes and communities have no input to control methods, which may directly affect them or culturally significant species or places. This is out of step with Australia's international obligations – including under the Convention on Biological Diversity and the United Nations Declaration on the Rights of Indigenous Peoples – and with contemporary Australian environmental law and policy, which recognise First Nations knowledge and custodianship as foundations for effective environmental management.

While NEBRA does allow non-government entities to participate in NBMCC processes as observers, observer status is rendered largely meaningless by a restriction preventing observers from speaking. Environmental NGOs – which often hold critical ecological expertise and maintain the community networks that biosecurity responses depend upon – are largely excluded under NEBRA and the industry deeds, and the information flows that would allow them to engage meaningfully are similarly restricted.

These gaps can and should be closed. Formal representation of First Nations perspectives in environmental biosecurity governance should be a requirement, not a discretionary matter for committee chairs. DCCEEW's Indigenous Advisory Committee provides one possible model; a standing First Nations reference panel or regional panels are others. The national significance criteria in NEBRA should be revised and co-developed with First Nations stakeholders to ensure that matters of cultural significance are explicitly recognised as values warranting protection.

NEBRA and, to the extent they provide for environmental biosecurity responses, the EPPRD and EADRA, should be amended to provide for structured, ongoing engagement with other non-government stakeholders across all phases of the response cycle – preparedness planning, Incident Definition, Emergency Eradication Response, and Transition to Management – not merely as silent observers, but as genuine participants able to contribute ecological knowledge, community networks and on-ground expertise to decisions at every stage. This might include a standing stakeholder advisory committee to the NBMCC and other industry consultative committees, external reference groups with genuine capacity to engage in collective discussion, and proactive notification of relevant non-government organisations when responses are under consideration.

Confidentiality is not a sound justification for exclusion – when required, appropriate arrangements can be made, as is routine in other processes. Voting rights on whether to proceed with or continue an eradication can appropriately remain with government parties. What cannot be justified is the lack of voice for organisations with relevant interests and knowledge, and most likely to bear the consequences if a response fails. Concerns about consultation slowing the process can be addressed

– including by advance development of contingency plans and flexible consultation processes. Environmental NGOs have among the highest stakes in responses being rapid and effective.

The governance model should be accountable to those with the greatest stake in the outcomes – not just those with commercial interests.

Recommendation 4: Mandate the creation of a permanent stakeholder advisory committee – comprising First Nations representatives, environmental NGOs, NRM bodies, and local government – to be consulted on all decisions and recommendations concerning environmental incursions by the NBMCC or, where relevant, consultative committees established under industry agreements. This committee should also provide advice on selecting local representatives for specific incursion responses.

Recommendation 5: The NEBRA custodian work with First Nations stakeholders to co-develop culturally appropriate criteria for decisions, including on national significance, and involvement in and communications about responses.

6 Governance arrangements

This section addresses discussion paper question 7.

The NMG³ makes key decisions – including whether to initiate an Emergency Eradication Response – on advice from the NBMCC and other consultative committees. Unlike the industry deeds, NEBRA does provide some flexibility in committee composition, allowing each party to nominate whichever lead department it considers most appropriate. In practice, however, agricultural departments routinely take the lead regardless of whether an incursion is primarily environmental in character. Environment departments – which often hold the relevant ecological expertise and bear responsibility for the natural assets at stake – are rarely at the table. Observers may attend NMG and NBMCC meetings but are not permitted to speak or vote, limiting the value of their presence. The result is that decisions with potentially irreversible environmental consequences may be made without the breadth of knowledge and perspective the stakes demand.

This is not an argument for displacing agricultural agencies, whose expertise in emergency response management remains essential. It is an argument for structured collaboration between biosecurity and environment portfolios from the outset of any response with significant environmental dimensions. The 2017 NEBRA review recommended the NMG be co-chaired by an environment department executive – a recommendation rejected on the grounds that the two portfolios then sat within one department and that co-chairs would complicate meeting protocols.⁴ Both objections have since been overtaken: DAFF and DCCEE are again separate departments, and co-chairs already operate on the National Biosecurity Committee, demonstrating the arrangement is workable. Environment departments should participate fully on the NBMCC and other consultative committees

³ The NMG under NEBRA and the EADRA is the National Management Group. Under the EPPRD, the NMG refers to the National Emergency Plant Pest Management Group.

⁴ KPMG, 2017, recommendation 3; and DAFF, National Biosecurity Committee response to the 2017 National Environmental Biosecurity Response Agreement 5-year review recommendations (website), Australian Government, accessed on 26 March 2026.

for incursions of primarily environmental significance, and the NMG should be co-chaired by representatives of the biosecurity and environment portfolios.

Two further governance problems risk impeding responses regardless of the quality of advice received. First, cost-sharing commitments require unanimous agreement among all contributing NMG members, giving any single jurisdiction an effective veto over a funded response irrespective of the environmental significance of the incursion. The separate decision on whether to initiate an Emergency Eradication Response requires only consensus, but is not explicitly limited to contributing members — meaning a non-contributing jurisdiction can participate in and potentially block that decision as well. Arrangements should be put in place to prevent reluctant or non-contributing jurisdictions from impeding Emergency Eradication Responses. Second, NBMCC recommendations are presented as consensus positions, obscuring the range of views that informed them and preventing the NMG from understanding where members disagreed. Advice to the NMG should reflect individual member positions rather than consensus, so that the full picture is visible to decision-makers.

Recommendation 6: Increase the representation of environmental department officials on the NBMCC and other consultative committees responding to environmental incursions. Require environment departmentals to be represented on the NMG and consider the option of co-chairs.

Recommendation 7: Limit the voting membership on the NMG to parties contributing to a cost-shared response. Jurisdictions not potentially affected by a pest or a disease or not intending to contribute to a cost-shared response should be non-voting members for decisions relating to the incursion.

Recommendation 8: Require NBMCC advice to reflect the individual positions of parties rather than consensus, so that the full range of views informing a recommendation is visible.

7 Custodian arrangements

This section addresses discussion paper questions 16, 17 and 18.

NEBRA's custodian role is currently held by DAFF and amounts in practice to little more than a set of administrative functions – maintaining records, tracking funding and reimbursements, providing interpretations of the deed, and managing the 5-yearly review process.⁵ The 2017 NEBRA review recognised this as inadequate and recommended the role be enhanced to support greater transparency, better engagement with non-government stakeholders and improved coordination across the system. Those recommendations were not meaningfully implemented.

The contrast with the industry frameworks is instructive. Under EPPRD and EADRA, preparedness is supported by extensive contingency planning, surveillance and diagnostics programs, research and development, training and stakeholder engagement. Little of this exists for environmental invasives. Contingency plans are few, training for responders is focused mainly on agricultural biosecurity,

⁵ Department of Agriculture Fisheries and Forestry, The NEBRA Custodian, on [National Environmental Biosecurity Response Agreement](#), accessed on 26 March 2026.

non-government stakeholders have no structured pathway into preparedness processes, and public reporting on NEBRA activity is minimal.

An enhanced custodian role could address these deficiencies by:

- building and maintaining relationships with non-government stakeholders, environmental agencies and First Nations representatives
- coordinating, where appropriate, with the custodians of EPPRD and EADRA on incursions with significant environmental impacts
- supporting public reporting and communications on environmental incursion activity
- accelerating preparedness and contingency planning for environmental incursions
- supporting training and induction for those involved in environmental biosecurity responses
- driving evaluation and adaptive improvement of the framework over time.

We recommend this expanded role be allocated – with commensurate funding – to the Australian Chief Environmental Biosecurity Officer.

Recommendation 9: Develop and adopt a formal description of the NEBRA custodian role that includes the following functions:

- administering the NEBRA, including efficiently and effectively coordinating the processes, and managing agreed funding mechanisms
- coordinating with the custodians of EPPRD and EADRA in respect of incursions with significant environmental impacts
- supporting public reporting of NEBRA, EPPRD and EADRA decisions, responses and outcomes relevant to environmental incursions
- building and maintaining relationships with non-government stakeholders, environmental agencies and First Nations representatives and supporting their engagement with relevant stakeholder advisory groups
- contributing to the development and maintenance of preparedness plans and contingency plans for priority environmental invasives
- supporting training and induction for those involved in environmental biosecurity responses
- driving the evaluation and adaptive improvement of the framework over time, including through reviews of NEBRA and other industry deeds

Recommendation 10: Appoint the Australian Chief Environmental Biosecurity Officer to the expanded NEBRA custodian role with the aim of improving transparency, stakeholder engagement and preparedness in environmental biosecurity responses as core functions.

8 Preparedness and surveillance

This section addresses the question:

- *How well prepared is Australia for rapidly detecting new incursions and being ready to effectively respond?*

Effective preparedness for environmental biosecurity emergencies depends on 3 interrelated elements: proactively identifying the species most likely to pose a significant threat, maintaining surveillance systems capable of detecting their arrival early, and having response plans in place before they arrive. All three are underdeveloped for environmental invasives, and the connections between them are poorly institutionalised.

Earlier detection means higher probability of eradication success. It compresses the area requiring treatment, reduces costs, and preserves options foreclosed once an invader becomes widely established. Yet targeted surveillance for priority environmental invasives remains limited, inconsistent across jurisdictions and poorly resourced relative to the surveillance programs that underpin the agricultural response frameworks. With appropriate education and resourcing, existing landholder networks alliances – including the Australian Land Conservation Alliance (encompassing First Nations alliances, NRMs, state covenanting agencies, Landcare and national eNGOs) – could contribute more to surveillance efforts.

One foundation for improved preparedness is a comprehensive list of potential invaders for which a rapid response is likely to be warranted. The National Priority List of Exotic Environmental Pests, Weeds and Diseases (the EEPL) does not adequately serve this function. It does not include many species likely to be candidates for emergency responses under NEBRA, nor does it adequately account for the changing risk environment, including new pathways and shifting distributions of potential invaders.

The scale of the gap is illustrated by comparison with agricultural biosecurity. Over 130 contingency plans have been developed through Plant Health Australia and Animal Health Australia, supported by technical guidelines and established response protocols. The equivalent work for environmental priorities has barely begun. A small number of preparedness plans exist – e.g. the National Incursion Response Plan for Terrestrial Snakes and the National Preparedness Plan for the Asian Black-Spined Toad – but they cover only a fraction of the species that warrant this level of readiness. They are also inconsistently structured. Without pre-agreed response protocols, decisions about how to respond must be made from scratch under emergency conditions – consuming time and resources that could be directed at the response itself, and increasing the risk that critical early windows for eradication are lost.

Addressing these gaps requires an expansion of preparedness and surveillance programs across federal, state and territory levels, and drawing upon existing networks of landholders and experts. The EPPL Action Plan, under revision, should include targets to accelerate the development of response preparedness plans and identify surveillance priorities. The Invasives Plan, in draft for many years, should be finalised. A standardised contingency plan format – applicable across all response frameworks and requiring consideration of environmental impacts, whether known or suspected – would improve the quality of individual plans and the coherence of the system.

Recommendation 11: As a high priority, strengthen Australia’s preparedness to respond effectively to new environmental incursions by:

- (a) maintaining a comprehensive and contemporary public database of potential environmental invaders that may warrant a rapid response if they arrive in Australia
- (b) accelerating the development of response preparedness plans and associated plans, such as the Invasives Plan
- (c) identifying priority surveillance targets and working with surveillance programs (federal and state/territory government, existing landholder networks and alliances and citizen science programs) to embed environmental priorities.

Recommendation 12: Adopt a standardised format for preparedness plans developed under NEBRA, EPPRD and EADRA, and require explicit consideration of environmental impacts in every plan regardless of which agreement applies.

9 Incursion reporting and the interaction between NEBRA and industry deeds

This section addresses the questions:

- *How well does incursion reporting operate in practice? Are incursions comprehensively reported?*
- *When an industry deed has been triggered, what arrangements are needed to ensure that environmental impacts are comprehensively assessed and incorporated into decision-making and response plans?*
- *How well do the industry deeds deal with environmental impacts of incursions?*

One of the most significant weaknesses in Australia's environmental biosecurity response framework is not within NEBRA itself, but in the relationship between NEBRA and the 2 industry agreements – EADRA and EPPRD. NEBRA has been triggered only for a very few incursions. Once an incursion engages any commercial interest – however modest relative to the environmental stakes – it defaults to one of the industry frameworks, and NEBRA becomes irrelevant. The environmental consequences of that default are serious and largely unexamined.

9.1 Incursion reporting

Effective emergency responses depend on incursions being detected and reported promptly and consistently. NEBRA requires that all incidents⁶ of an emergency environmental pest or disease (EPPD)⁷ be reported to the Commonwealth's Chief Veterinary Officer, Chief Plant Protection Officer

⁶ An ‘incident’ is defined as the occurrence of a confirmed or reasonably held suspicion of an EPPD that has passed through Australia’s border, and has either been detected in or on its original consignment or carrier material; or that has migrated from its original carrier and established in other hosts or host material in Australian territory, and was not known to be present in Australia prior to the detection, or if present is subject to an active eradication response, and is not a range extension of an established pest or disease.

⁷ An EPPD is defined as a pest or disease that is ‘nationally significant’ (per the criteria in NEBRA) and meets one or more of the following criteria:

and Chief Environmental Biosecurity Officer within 24 hours of a Commonwealth, state or territory biosecurity official becoming aware of it.

There is considerable leeway for interpretation in determining whether an environmental incursion should be reported under NEBRA, and the evidence suggests this is producing inconsistent results. Only a small number of incursions have been assessed under the agreement since its inception, while the broader record of detected environmental invasives – including those managed under state and territory programs, or left unmanaged – is substantially larger. Nile tilapia were detected in the Torres Strait in 2022, Christmas light sea squirts in southern New South Wales waters in 2022, and Asian shore crab in Port Phillip Bay in 2020. Why these detections were not reported under NEBRA is unclear. The relevant jurisdictions may have considered the criteria for national significance or eradication feasibility were not met. Whatever the reason, the disparity raises questions about whether reporting thresholds are appropriate or being applied consistently.

One solution would be to amend NEBRA to require all newly detected incursions to be publicly reported and to provide for the Australian Chief Environmental Biosecurity Officer to determine, in consultation with relevant experts and stakeholders, whether a detection constitutes an EEPD incident requiring further action. The benefits of comprehensive reporting would be significant: consistent reporting across jurisdictions; national visibility of all detections, allowing jurisdictions to raise concerns and prepare for potential spread; timely information for researchers, NGOs and other interested parties; and greater public awareness of the environmental invasives entering Australia and the value of the national response framework.

9.2 The subordination of NEBRA to the industry deeds

Under current arrangements, NEBRA is subordinate to the industry deeds and not engaged if EADRA or EPPRD has been triggered. There is no requirement that the NEBRA custodian or NBMCC chair be notified when a referral is made under an industry deed. An incursion with significant environmental implications may progress through an industry consultative committee process without environmental considerations being appropriately weighed.

This subordination is understandable insofar as the industry deeds provide the pre-agreed financial mechanism for industry contributions. But it creates a critical governance problem where environmental impacts are significant: industry parties who contribute to a response under EADRA or EPPRD acquire an effective veto over eradication decisions – including decisions that would primarily benefit the natural environment – while environmental stakeholders have no influence at all.

Further problems flow from this. When an industry deed is triggered, there is no requirement for the consultative committee to include or consult environmental experts. The criteria for assessing environmental impacts under EPPRD and EADRA are inconsistent with those under NEBRA – terminology differs, thresholds are not aligned, and the benefit-cost and technical feasibility

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- (a) a known pest or disease, which, if established in Australia, would be environmentally harmful and for which it is considered to be in the national interest to eradicate
 - (b) a distinguishable variant of a pest or disease that is established, but not a new incidence of an established pest or disease, which if established in Australia would have a regional and national impact
 - (c) a pest or disease of unknown or uncertain origin, which may, on the evidence available at the time be an entirely new pest or disease and which if established in Australia is considered likely to have an adverse environmental impact on the nation.

requirements appear more onerous under NEBRA. Both EPPRD and EADRA provide for a Category 1 classification covering incursions causing major environmental damage with limited commercial impact – broadly equivalent in intent to a NEBRA response – but the basis on which an incursion is classified as Category 1 rather than referred to NEBRA is not transparent.

A further gap arises where an industry deed is triggered but no response is approved – whether because jurisdictions cannot reach consensus, industry parties exercise their veto, or the response is assessed as not cost-beneficial in commercial terms. Under current arrangements, there is no automatic mechanism for reconsidering such an incursion under NEBRA, even where the environmental case for a response remains strong. An industry decision not to act becomes, in effect, a decision that no nationally coordinated response will occur – regardless of the environmental consequences.

This gap should be closed. Where a response under an industry deed is declined or abandoned and the incursion has environmental significance, there should be a mechanism for reconsidering whether a NEBRA response is warranted, including consultation with relevant stakeholders. Where consensus cannot be reached under NEBRA, consideration should be given to NEBRA-like arrangements (as exist for the responses for red fire ants, electric ants and tropical weeds) allowing a response to proceed on the basis of agreement among willing parties rather than requiring unanimity.

We understand EPPRD review overlaps in timing with this NEBRA review – an important opportunity that should not be missed. They govern overlapping territory but apply inconsistent criteria to environmental impacts. Their reviews should be coordinated, with the objective of achieving complementarity – to ensure that environmental impacts are assessed consistently and rigorously under both frameworks, that the pathway between them is transparent, and that environmental expertise and stakeholder input are required whenever environmental values are at stake, regardless of which deed applies. Any consequential modifications should also be applied to EADRA.

Recommendation 13: Amend NEBRA to require all new detected incursions to be reported to the centralised public reporting point and reviewed by the Australian Chief Environmental Biosecurity Officer to determine, in consultation with relevant experts and stakeholders, which are EEPD incidents requiring further action under the framework.

Recommendation 14: When an industry deed is triggered for an incursion with significant environmental impacts, ensure the relevant consultative committee includes environmental experts, engages with the NEBRA stakeholder committee and assesses environmental impacts using NEBRA criteria. Alternatively, establish a formal mechanism for reconsidering environmentally significant incursions under NEBRA when a response under an industry deed has been declined or abandoned.

Recommendation 15: Coordinate the NEBRA and EPPRD reviews to ensure the agreements are updated to be complementary, with consistent terminology and criteria for environmental impacts, and aligned requirements for benefit-cost analysis, technical feasibility and environmental expertise across both frameworks. Apply any changes to the EADRA as required.

10 Incident Definition phase

This section addresses discussion paper questions 3, 4, 5, 8, 9, 10. It also addresses the questions:

- *Should the criteria governing environmental biosecurity responses be consistent regardless of which deed is triggered?*
- *What should count as nationally significant for the environment?*
- *What purpose does the benefit-cost analysis serve? Is it appropriate for environmental incursions?*
- *What is a good process to deal with the level of uncertainty associated with environmental incursions?*

In this section we explore the decision-making criteria and involvement of experts in the Incident Definition phase – in which the relevant consultative committee assesses whether an incursion meets the criteria for a national response and makes a recommendation to the NMG.

10.1 Decision-making criteria and assessments

Decisions about whether to respond to an environmental incursion should reflect the distinctive character of environmental invasions, particularly the potential for permanent losses – to species, ecosystems, ecological functions and cultural values. An environmental biosecurity response framework should therefore apply the precautionary principle with risk assumptions calibrated to the irreversibility of potential harm; take an ecosystems-based approach that accounts for cumulative and cascading ecological effects; account for ecological timescales; and weigh inter-generational equity alongside present expenditure in any assessment of whether to respond.

NEBRA requires that an incursion satisfy 3 tests before a national response is approved: national significance, technical feasibility, and cost-benefit. Each presents serious difficulties when applied to environmental incursions and, depending on interpretation, can set a bar that few environmental incursions are likely to clear. Some criteria also appear more stringent than equivalent provisions under EPPRD and EADRA – particularly for benefit-cost and feasibility – and the basis for this asymmetry is unclear and should be reviewed.

10.1.1 National significance criteria for the environment

Across different policy areas, the Australian Government applies divergent criteria to identify invasive species of environmental significance (or potential significance) – including for the National Priority List of Exotic Environmental Pests, Weeds and Diseases (EEPL), weeds of national significance, live import assessments under the EPBC Act, disease risk assessments under the Biosecurity Act, and key threatening processes.

The current national significance criteria under NEBRA encompass a wide variety of impacts – including on species, places, ecosystems, ecosystem processes and non-biotic elements of the environment – but they are deficient in the following respects:

- **Undefined and inconsistent terminology:** What are the differences between ‘severe’, ‘significant’, and ‘extensive’? These are all terms used to describe impacts. The subcriteria for significant impacts on species or places (ss2.2 to 2.5) provide some guidance – e.g. substantial modification, displacement, destruction or isolation of a significant proportion of the habitat –

but there is no guidance on what ‘extensive impacts’ mean for the largest category of potential impacts, including on biodiversity and the physical environment (s2.6). There is no guidance, for example, to determine whether an impact that could cause a native species to become threatened, or more threatened, counts as ‘extensive’. Or whether indirectly boosting the threat of an existing invasive species counts as an impact.

- **Vagueness of some criteria:** Some subjectivity is inevitable, because it is difficult to precisely specify the values of nature and the multitude of impacts by invasive species, but several criteria are excessively vague – for example, a place that ‘makes a significant contribution to Australia’s natural environment’. Does this include protected areas? Habitat for threatened species? Evolutionary refuges? This framing is far too open to interpretation.
- **Short-term time horizons:** Once a new species has established, the manifestation of impacts can take centuries and change substantially as climates and habitats change. While the impacts to be considered are those projected if the new species was to realise its full potential range in Australia, the focus on species and places currently considered important indicate a limited time horizon. The ‘nationally important species’ and ‘ecologically valuable places’ criteria are explicitly current in their focus on EPBC-listed species and ecological communities even though these lists are not at all comprehensive and one of the likely consequences of a new invasion is unlisted species and ecological communities becoming threatened – as amply demonstrated by the impacts of myrtle rust. The ‘biodiversity’ element of the ‘extensive impacts’ could potentially cover this eventuality but there is nothing to indicate whether a long-term potential for decline in currently non-threatened species is sufficient to count as extensive.
- **Lack of benchmarks:** There is little or no guidance to indicate the threshold for significant or extensive impacts. Nor is there clarity about how impacts on the environment are weighted against economic impacts. Is the potential for a significant decline in an Australian species regarded as more or less important than a major economic impact? The NEBRA criteria do not enable benchmarking across the different impact categories for the environment or with social and economic impacts – important for ensuring that environmental impacts are accorded appropriate weight.
- **Lack of linkage to EEPL impact assessments:** The disparities between different types of impact assessment in Australian Government processes are particularly questionable for the NEBRA and the EEPL – both DAFF processes intended to prevent the establishment of new harmful species in Australia. Shouldn’t a species identified as significant enough to be listed as an EEPL also be one that would qualify as nationally significant under the NEBRA? And shouldn’t one of the functions of the EEPL be to identify priorities for response preparedness for cost-shared eradications?

Some subjectivity in environmental criteria is inevitable but the current extent of vagueness leaves assessments open to manipulation to achieve a desired rather than well-justified result.

The current criteria can be improved – for example, by specifying that important species include threatened species on the IUCN Red List and state/territory lists and that important places include protected areas. Guidelines are needed to clarify what counts as nationally significant for each of the criteria – both the type and degree of impact.

But a more useful approach would be a process, led by DCCEEW and the Environmental Biosecurity Office, to develop a comprehensive set of national significance criteria that can be applied across different deeds (and different policy domains) and that provide benchmarks by which environmental, social and economic impacts can be credibly compared. One option would be to adopt or modify a framework such as EICAT (Environmental Impact Classification for Alien Taxa), EEICAT (Extended Environmental Impact Classification for Alien Taxa, inclusive of ecosystem impacts)⁸ and SEICAT (Socio-Economic Impact Classification for Alien Taxa)⁹. The EICAT was used for assessing candidate EEPL species.

10.1.2 National significance criteria for impacts on people

The critique above about environmental criteria mostly also applies to the ‘people, human infrastructure and social amenity’ criteria.

Most significant is that the criteria do not adequately address the interests of First Nations peoples. The cultural impacts sub-criterion does not explicitly mention First Nations cultures, and is vaguely and narrowly framed in terms of ‘cultural assets’. Matters of cultural significance may not be known or considered unless they are listed or protected under the EPBC Act (e.g. as species or national heritage places). As no assessments under these criteria have been made publicly available, it is impossible to evaluate how this criterion is being applied. As already recommended, First Nations people should be engaged to co-design appropriate criteria.

10.1.3 Responses to uncertainty

There is a certain degree of precaution inherent in the NEBRA assessment criteria, but it depends on the interpretation of ‘likely’ by assessors – e.g. whether ‘a pest or disease would likely have an extensive impact’. There is no guidance in the NEBRA or the other deeds about the recommended approach to uncertainty.

Assessors for most new environmental incursions must grapple with a significant degree of uncertainty – typically much greater than for agricultural incursions, whose interactions are much simpler and more predictable, with the same species farmed all over the world.

Because of the uniqueness of the Australian environment and the complexity of ecology, the impacts of a novel species, even for introduced species with a history of invasion elsewhere, are inherently unpredictable. There are several examples of invasive species having much more severe impacts on the Australian environment than predicted, including myrtle rust, which, despite the potential range of highly susceptible native Myrtaceae species, was initially only assessed as having a ‘high’ environmental impact, while the industry impact was rated ‘high-extreme’.¹⁰

Also, while agricultural assets at risk are largely replaceable and the consequences of a new invasive species can be mitigated through treatment or substitution, environmental incursions have often caused permanent losses – to species, ecosystems, ecological functions and cultural values – that cannot be undone.

⁸ L Carneiro, D Pincheira-Donoso, B Leroy, S Bertolino, M Camacho-Cervantes, RN Cuthbert, et al, 2026, Expanding invasive species impact assessments to the ecosystem level with EEICAT, *PLoS Biol*, 24(3): e3003665. <https://doi.org/10.1371/journal.pbio.3003665>

⁹ S Bacher, TM Blackburn, F Essl, et al, 2018, Socio-economic impact classification of alien taxa (SEICAT), *Methods Ecol Evol*, 9: 159–168. <https://doi.org/10.1111/2041-210X.12844>

¹⁰ Plant Health Australia, 2009, Threat Specific Contingency Plan Guava (eucalyptus) rust *Puccinia psidii*, p 19.

The precautionary principle – well established in Australian and international environmental law – holds that where there is a threat of serious or irreversible harm, lack of full scientific certainty should not postpone protective measures. The EPBC Act requires its application for closely related decisions about whether a live organism should be permitted entry to Australia. The uncertainties and potential for serious and irreversible harms associated with new environmental incursions are compelling reasons to require its application for decisions under NEBRA and the other deeds.

10.2 Technical feasibility

Schedule 3 of NEBRA requires consideration of 15 criteria before an emergency eradication response can proceed, including the level of confidence in control techniques, the ability to remove organisms faster than they propagate, and the likelihood that all affected sites can be identified. While the agreement does not explicitly require high certainty on each criterion – and provides a lower-threshold Incident Definition Response where eradication is merely presumed feasible – the cumulative weight of the criteria, and their apparent application in practice, sets a bar that many environmental incursions are unlikely to clear. For novel species with little prior eradication or management experience, the information needed to satisfy these criteria will often not exist at the point a decision must be made.

The Incident Definition Response, a welcome addition in the 2021 amendments, provides a pathway for testing feasibility and gathering data that could inform future responses. However, it is unclear how and when such responses are used in practice, and whether they can generate sufficient evidence of eradication feasibility within the time allowed.

10.3 Benefit-cost

There is no standard methodology for conducting a benefit-cost analysis under NEBRA or under other deeds for environmental incursions, creating scope for inconsistent approaches weighted towards desired outcomes. More fundamentally, the NEBRA requirement that an eradication be assessed as cost-beneficial before it can proceed, or for a response to continue from an Incident Definition Response, is conceptually inappropriate for environmental and cultural values that cannot be meaningfully quantified in dollar terms. While NEBRA does provide for qualitative assessments where quantitative data is unavailable – a welcome provision – it discloses no methodology, no minimum standards or scope, and requires no public reporting on how they have been conducted or weighted. Without this transparency, there is no basis for confidence that this provision is being used appropriately or consistently, or provision for updating should new information come to light. Satisfying the cost-beneficial prerequisite should be removed for incursions of environmental significance, replaced by a requirement to document costs and benefits – including qualitative and cultural benefits – to inform, but not determine, a decision on whether to proceed with eradication.

10.4 Expertise

The effectiveness of the Incident Definition phase depends ultimately on the quality of the ecological, scientific and cultural knowledge brought to bear on assessments. At present, the involvement of experts is discretionary, and its application is invisible to those outside the process. Given the complexities and uncertainties associated with environmental incursions, decision-making should be optimally supported by ecological expertise. The NBMCC and other consultative committees responding to environmentally significant incursions should be required to seek

independent scientific and technical advice for all assessments – and in the development of response plans – and this advice should be published as a matter of course.

Recommendation 16: Require that decisions relating to environmentally significant incursions under NEBRA, EADRA and EPPRD apply ecological risk frameworks that incorporate:

- consideration of comprehensive ecological consequences, including complex species interactions and cumulative impacts
- the precautionary principle, with conservative risk assumptions applied in proportion to the irreversibility of potential harm
- inter-generational equity, recognising that ecological losses can be permanent and that obligations to future generations should be weighed alongside present costs
- ecological timescales, ensuring that risk assessment and investment decisions account for the long lag times and extended invasion dynamics characteristic of natural systems.

Recommendation 17: Develop and publish guidelines on when and how the Incident Definition Response will be applied.

Recommendation 18: Review whether the technical feasibility criteria are appropriately calibrated for environmental incursions – ensuring they enable responses to incursions for which the feasibility of eradication is uncertain but testable and facilitate adaptive responses.

Recommendation 19: Remove the requirement that a response be assessed as cost-beneficial before it can proceed for incursions of environmental significance. Replace it with a requirement to document known costs and identified benefits – including qualitative, cultural and ecological benefits.

Recommendation 20: Require the consultative committees considering incursions with significant environmental impacts to seek independent scientific and technical advice in making assessments and recommendations on whether to initiate a response and in the development of response plans. The expert advice, the identity of experts consulted and the reasoning applied by the committee should be published as a matter of course.

11 Emergency Eradication Response phase

This section addresses discussion paper questions 6 and 11. It also addresses the questions:

- *How to create dynamic, agile, efficient and effective response programs?*
- *What kind of workforce planning is required?*
- *What is the best governance arrangement for an effective response?*

Once a decision is made to proceed with an Emergency Eradication Response, the quality and effectiveness of what follows depends on having a trained and available workforce, and on how response plans are developed, approved, implemented and adapted over time.

11.1 Workforce planning and training

Responders must be able to hit the ground running, with an established understanding of response protocols, decision-making frameworks, ecological risk assessment, and the distinctive challenges of managing invasive species in natural environments. Such workforces cannot be assumed. They require active planning. The NEBRA custodian should work with Jobs and Skills Australia and all jurisdictions to develop workforce skills profiles and plans that support environmental biosecurity response workforce needs.

The skills and knowledge required for environmental incursion responses – working across diverse and complex ecosystems, engaging with a broader range of stakeholders including First Nations communities and environmental NGOs, applying ecological risk frameworks, and managing responses where impacts are diffuse and difficult to measure – are not consistently taught or assessed. This gap needs to be closed, not left to individual jurisdictions to address as they see fit.

Training for environmental biosecurity responses should be standardised across jurisdictions, drawing on the cooperation of bodies with established training capacity – including Plant Health Australia, Animal Health Australia and Wildlife Health Australia – and coordinated by the NEBRA custodian. Training should be designed and delivered with meaningful input from practitioners who have on-ground experience in environmental eradication responses, and from relevant scientific and ecological experts, rather than being adapted wholesale from agricultural biosecurity curricula. Classroom and online training alone is insufficient. The skills required for effective emergency response – rapid assessment, adaptive decision-making under uncertainty, and inter-agency coordination – are best developed and tested through regular simulations and exercises that replicate real incursion conditions.

War-gaming of likely scenarios, including for species on the EEPL and other environmental priority lists, should be a standard component of preparedness, involving not only government agencies but the NGOs that will be expected to contribute to or support a response. This would build familiarity with processes and assumptions across a wider group of participants, improve coordination during an actual response, and help identify capability and planning gaps before they matter.

11.2 Adaptive management and the approval process

Under NEBRA, response plans must be approved by the NMG on advice from the NBMCC, and any variations to an approved plan or budget must similarly be approved by the NMG before they can take effect. We understand this requirement often applies without apparent distinction between strategic changes, such as a fundamental shift in the approach to eradication, and operational adjustments that a lead jurisdiction needs to make quickly in response to changing conditions on the ground. For long-running, complex responses involving dynamic and unpredictable invasive species, this creates a significant problem. Effective eradication programs require adaptive management: the ability to modify methods, redeploy resources and adjust priorities in response to new detections, changed species behaviour or emerging evidence about what is and is not working. Where every such adjustment requires NMG approval, the governance process can constrain operational effectiveness.

This tension is not unique to NEBRA – it arises in any framework that must balance accountability for public expenditure against the operational freedom needed to manage a fast-moving emergency. The solution is not to remove oversight but to distinguish between strategic decisions that genuinely

warrant NMG approval, and operational decisions that should be within the discretion of the combat state or lead jurisdiction, subject to reporting and review. Clear published guidelines on when variations require NMG approval – including defined funding thresholds above which approval is required, and tolerances for operational adjustment below which the lead jurisdiction has freedom to act – would provide both the accountability the framework requires and the agility that effective responses demand.

There is also a lack of transparency around when feasibility and risk reviews will be triggered during an ongoing response. The NEBRA provides for review points to be specified in response plans, but no public guidelines exist on the criteria or thresholds that should trigger a review of whether a response remains technically feasible or cost-beneficial. Without such guidelines, there is no basis for external scrutiny of whether reviews are being called at the right time, or whether responses are being continued or ceased for the right reasons.

11.3 Research and development during responses

A related concern is whether NEBRA permits the funding of research to develop and test new control methods as part of a jointly funded emergency response. For many environmental incursions – particularly of species that have never been eradicated or those affecting complex ecosystems – the techniques needed for effective eradication may not exist at the time a response is initiated, and may need to be developed or adapted as the response proceeds. The ability to fund research and innovation is often therefore not extraneous to a response but a practical necessity. It is particularly important for environmental eradications due to the constraints of operating within native ecosystems, which does not permit responses typical of agricultural biosecurity such as stamping out. This review should clarify whether the current eligible costs framework in Schedule 5 permits research expenditure, and if not, whether NEBRA should be amended to allow it.¹¹ Providing research funding – and ready access to relevant data to researchers and stakeholders – within jointly funded responses would both improve the prospects of individual eradications and build the national capability that makes future responses more effective.

11.4 Contingency funding

Effective eradication responses also require contingency funding – a pre-approved budget reserve that can be deployed rapidly when new detections, unexpected spread or emerging operational challenges require an immediate scaling up of effort. Under NEBRA's current arrangements, additional expenditure beyond the approved response plan budget requires NMG approval, creating the risk that critical early response windows are lost while funding negotiations proceed. A contingency budget, pre-approved as part of each response plan within defined parameters, would allow the combat state to act immediately when circumstances demand it, while still maintaining accountability through reporting obligations and defined limits on its use.

¹¹ Page 7 of the Consultative Committee on Emergency Plant Pests job card in the PLANTPLAN suggests that the consultative committee may 'identify research needs and may initiate, facilitate and monitor to completion appropriate research projects.' It is not clear whether it is similarly possible for the NBMCC to initiate research under NEBRA. Greater clarity is required.

Recommendation 21: In conjunction with Jobs and Skills Australia and jurisdictions, the custodian should develop workforce skills profiles and plans that support environmental biosecurity response workforce needs.

Recommendation 22: The NEBRA custodian, in cooperation with Plant Health Australia, Animal Health Australia, Wildlife Health Australia and relevant scientific and ecological experts, develop and maintain a standardised training program for environmental biosecurity emergency response workforces. The custodian should also coordinate with jurisdictions to ensure appropriate workforce plans support timely and effective emergency responses.

Recommendation 23: Conduct regular simulations and exercises based on realistic incursion scenarios – including for priority species on the EEPL – as a standard component of environmental biosecurity preparedness, with participation extended to non-government organisations expected to contribute to or support responses.

Recommendation 24: Develop and publish guidelines on response plan development and variation, distinguishing between strategic decisions requiring NMG approval and operational decisions within the discretion of the combat state, with defined funding thresholds and tolerances for operational adjustment.

Recommendation 25: Publish guidelines on the criteria and thresholds that will trigger feasibility and risk reviews during an ongoing response, including budget review points and defined tolerances for assessing whether a response remains on track.

Recommendation 26: Ensure it is clarified that the eligible costs framework permits expenditure on research to develop and test new control methods as part of a jointly funded response, including during the Transition to Management phase, and ready access to relevant data. Amend NEBRA to explicitly allow such funding and data access if necessary.

Recommendation 27: Include a pre-approved contingency budget as a standard component of each response plan, with defined parameters for its use.

12 Transition to Management phase and other post-eradication management

This section addresses discussion paper question 23. It also addresses the question:

- *What is an optimal approach to environmental containment?*

The Transition to Management phase – an optional 12-month period following a decision to cease eradication – is a welcome improvement to NEBRA, bringing it into line with the industry deeds. However, the framework is limited by:

- a lack of guidance on what is entailed in a successful transition to management
- constrained transition timelines, despite the potential environmental, social and economic benefits of longer-term containment
- constrained funding for transitions, containment and research

- lack of a pathway back to Emergency Eradication Response where new research or control methods make it feasible.

12.1 Guidelines on transition

Although the decision about whether to cease an eradication and transition to management is consequential and typically irreversible, there are no public guidelines, structured process, criteria, or community engagement requirements to guide decision-making, provide confidence to stakeholders and ensure that the ensuing management is optimal for environmental risks. Comprehensive guidelines should be developed to support these decisions, including:

- the criteria and process for deciding to cease eradication and transition to management, including a requirement for independent scientific advice
- mandatory and ongoing consultation with impacted or potentially impacted communities – including First Nations communities – to inform the proposed management approach
- requirements for surveillance and monitoring of dispersal of the target species
- preparedness arrangements for potentially affected jurisdictions.

12.2 Timeframe for transitions and ongoing containment

Environmental responses are often far more complex than their agricultural counterparts: the impacts are frequently permanent, recovery timelines are measured in decades, and the ecosystems affected cannot simply be replaced. A 12-month window may be inadequate for a transition from eradication to containment, undertaking surveillance to monitor rate of spread, conducting the requisite community engagement, and developing longer-term management strategies. The duration of the Transition to Management phase should be determined by what is in the public interest – consistent with the overall purpose of NEBRA – rather than an arbitrary time limit. Where a longer period is warranted, cost-sharing arrangements for any phase extending beyond 12 months may be appropriately modified – for example, by allowing flexible contribution arrangements that do not require full participation of all jurisdictions.

Regardless of the deed, significant environmental, social and economic benefits can accrue with effective containment of environmental incursions. For example, it can limit impacts while better control or eradication methods are developed, preserve options for a future return to eradication, or represent better value than uncoordinated or unstrategic control efforts.

The limitations of the current approach problem are illustrated by the myrtle rust response managed under the EPPRD between 2010 and 2013. In that case, the Transition to Management actions were focused almost entirely on industry needs despite the greatest damage being sustained by native flora and ecosystems. No funded actions were directed at capturing germplasm of highly susceptible native species, systematic monitoring, or species recovery strategies. This resulted in a 7-year gap before meaningful recovery actions commenced.

Where assessed to be in the public interest, we recommend providing for longer-term joint funding of containment activities – whether under the 3 agreements, off-deed, or in a supplementary agreement.

12.3 Funding constraints

As previously mentioned, the current \$5 million annual aggregate cap on NMG commitments applies across all phases of a response including Transition to Management. This limit creates perverse incentives to abandon, rather than transition, a response. It also severely constrains opportunities to support research into control methods, including innovative or emerging approaches – to improve long-term outcomes for affected ecosystems and to preserve the possibility of a future return to eradication. We reiterate our previous recommendations in these respects.

12.4 Pathway from containment back to eradication

Under both NEBRA and the industry deeds, once a response has moved to a Transition to Management phase, there is no provision to return to an Emergency Eradication Response – even if new research or insights demonstrate feasibility, new control methods are discovered, or changing circumstances improve the benefit-cost ratio. This is a significant gap. Scientific knowledge evolves, and new molecular and biological control techniques are developing rapidly. All 3 agreements should be amended to allow for a return to an Emergency Eradication Response following a Transition to Management Phase.

Recommendation 28: Develop guidelines on when to decide to transition to management and cease eradication for environmental incursions. The guidelines should cover decision-making criteria, expert and community consultation (including First Nations communities), surveillance requirements, stakeholder communications, and preparedness of potentially affected jurisdictions.

Recommendation 29: Remove the 12-month cap on the Transition to Management phase and replace it with a duration based on an assessment of public benefit. Modified cost-sharing arrangements that do not require full participation of all jurisdictions could apply to extended phases.

Recommendation 30: Extend NEBRA's scope beyond eradication to provide for nationally coordinated, cost-shared containment for environmental incursions where containment is in the public interest. If this cannot be accommodated within NEBRA, an equivalent supplementary agreement should be developed.

Recommendation 31: Allow for a return to an emergency eradication response following a Transition to Management phase, where new research, new control methods, or a revised benefit-cost analysis make eradication feasible or warranted.

13 Review and evaluation

This section addresses discussion paper question 13. It also addresses the questions:

- *How to generate public confidence in response programs and demonstrate to treasuries and the public that it is worth investing in emergency responses?*
- *How to create a culture of continuous improvement, learning as you go and retaining institutional knowledge?*

The environmental biosecurity response framework's reporting and accountability obligations are minimal. Information available to the public includes no evaluation of the effectiveness of the emergency response process or individual response programs, no account of what worked and what did not, and no communication of lessons learned.

There is also nothing explicit in the NEBRA, EADRA or EPPRD to foster a culture of continuous improvement. Response plans are assessed in financial terms, but combat states or territories and the Commonwealth are not required to produce evaluations of what worked or did not, what remains uncertain, and what should be done differently. This is a significant missed opportunity: emergency eradication responses generate practical knowledge that is rarely captured systematically. A lack of structured evaluation and knowledge-retention processes risks the loss of institutional knowledge when staff move on, repetition of mistakes, and relitigation of the same questions.

13.1 Evaluation and continuous improvement

Eradications of invasive ants in Australia – including successful responses to browsing ants in the Northern Territory and multiple fire ant incursions – have demonstrated impressive improvements over time. Understanding the enabling conditions would be valuable for the broader NEBRA framework. A review of lessons learned from emergency eradications to date would help establish a baseline for continuous improvement. The evaluation culture that has developed recently around island eradications – including for Macquarie and Lord Howe islands, and work undertaken by the National Environmental Science Program on lessons learned – could inform how NEBRA practitioners approach the same challenge.

To foster continuous improvement, combat states should be required to produce evaluations of responses – addressing whether plan objectives were achieved, what worked well, areas for improvement, the accuracy of feasibility and benefit-cost analyses, and gaps warranting further research. To balance the need for frank assessment against the need for transparency, a summary of each evaluation should be published.

13.2 Audit mechanisms and independent review

NEBRA allows the NMG to request financial or efficiency audits, but this is discretionary and results need not be made public. There is no provision for independent review of the conduct of a response, whether the decision to respond or not was sound, or whether it achieved its objectives efficiently. Decisions not to initiate a NEBRA response, and decisions to cease responses already underway, are not subject to any formal review mechanism at all.

The Inspector-General of Biosecurity has an important role in reviewing the performance of Australia's biosecurity system, but this does not extend to actions under NEBRA, EPPRD or EADRA. Expanding this remit to enable reviews of eradication responses – including those above a certain spending threshold and a representative sample of others, including unsuccessful responses and decisions not to respond – would provide a meaningful check on the system and a further mechanism for embedding lessons, as would providing an option for the NMG to commission an independent expert evaluation of the response.

13.3 Impacts of limited public reporting

The limited communications about NEBRA activities is a missed opportunity to build the public and political support that biosecurity responses require. Although every incursion of red imported fire

ants has been eliminated – a genuine success story – this is barely known publicly. Communicating what is at stake, what has been invested, and what has been achieved is essential for maintaining the social licence and Treasury support for emergency responses, particularly when they are expensive, prolonged, or ultimately unsuccessful.

Recommendation 32: Require combat states or territories to prepare post-response evaluation reports, and provide the option for the NMG to commission an independent expert evaluation of responses.

Recommendation 33: Commission an independent review of lessons learned from emergency eradications to date, including case studies such as advances in invasive ant responses and what conditions enabled this, and a review of the relevance of island eradication evaluations to the emergency response context.