Tackling invasive species threats through stronger national environmental laws

Putting Nature Positive into Action

Submission by the
Invasive Species Council

April 2023

Document details

Invasive Species Council. 2023. Tackling invasive species threats through stronger national environmental laws. Putting Nature Positive into Action. Submission by the Invasive Species Council.

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.

Intellectual property rights

Inquiries

Invasive Species Council
Contact: James Trezise / Carol Booth
Address: PO Box 818, Katoomba NSW 2780, Australia
ABN: 27 101 522 829
Web: invasives.org.au
Email: contact@invasives.org.au

CONTENTS

Introduction

Since the advent of the EPBC Act over 20 years ago, at least 7 unique animal species and probably 2 plant species have become extinct. More than 100 species have recently been assessed as facing a high or >50% risk of extinction in the next 10–20 years – more than the total number of confirmed extinctions since European colonisation. Hundreds of species have been added to the threatened species list and many unlisted species are also in serious decline, including some of those facing imminent extinction.

These statistics confirm that the EPBC Act is, in reviewer Professor Graeme Samuel's words, 'ineffective and not fit for current or future environmental challenges'.

Invasive species have been the major driver of extinctions in Australia, particularly of animals. They were the primary cause of all except one of the seven animal extinctions since 2000[1] and are currently the highest impact threat to threatened species.[2] This is not only due to long-established invaders such as cats and foxes, but because of recent biosecurity failures. Sixteen native plants are at high risk of imminent extinction (within just one plant generation) due to myrtle rust, which was first detected only in 2010 and subject to a belated and failed eradication attempt.

The commitment to no new extinctions cannot be achieved unless the new environmental law has a stronger focus on protecting Australian species and places from invasive species – by stopping new invaders from arriving and establishing, preventing emerging invasive threats from becoming entrenched and abating entrenched threats.

On the following pages are our main recommendations for achieving this with their rationale and a few case studies to illustrate the need for or value of the proposed reforms.

Recommendations

1. Strengthen Australia's approach to threat abatement

1.1 Require the comprehensive listing of threats to matters of national environmental significance (MNES) – including threatened species and ecological communities, World Heritage properties, National Heritage places and wetlands of international significance – on the advice of the Threatened Species Scientific Committee or an equivalent independent scientific body or process. Maintain the public nomination process to supplement threat listings.

1.2 Classify listed threats hierarchically as:

(a) Key threatening processes – overarching processes such as habitat loss and invasive species.

(b) Threats of national environmental significance – more-specific threats within each key threatening process such as land clearing for specific purposes and particular invasive species.

1.3 Institute an 'emerging threatening process' (ETP) category of threat to facilitate urgent or precautionary interventions to prevent emerging threats from becoming entrenched threats. Require

[1] Northern tinker frog (chytrid fungus), white-chested white-eye (black rats), Christmas Island pipistrelle (wolf snake), Bramble Cay melomys (sea-level rise), Christmas Island forest skink (wolf snake), blue-tailed skink (extinct in the wild, wolf snake), Lister's gecko (extinct in the wild, wolf snake).

[2] Based on the number of high-impact and medium-impact threats to listed threatened species as analysed by Ward et al. 2021. https://onlinelibrary.wiley.com/doi/full/10.1002/ece3.7920

regular horizon scanning by the Threatened Species Scientific Committee (or equivalent to identify such threats.

1.4 On listing a threat of any category, require the Threatened Species Scientific Committee to prepare a statement about the actions (management, research) and instruments (plans, policies, regulations) needed to abate the threat (to the extent that it can be delisted). Streamline the process for preparing threat abatement plans and recovery plans, and reduce the timeframes in which they must be finalised. Better integrate threat abatement and recovery actions, including through new proposed recovery strategies.

1.5 Enable the development of multiple threat abatement plans for a listed Key Threatening Process.

1.6 List key threatening processes as a matter of national environmental significance and apply the referral and assessment framework to regulate actions likely to significantly exacerbate threats.

1.7 List invasive species and develop regulations under provisions equivalent to those of s301A of the EPBC Act where this will facilitate nationally coordinated abatement of key threatening processes and threats of national environmental significance.

2. Improve assurance oversight of threat abatement and conservation planning

2.1 Accord the new Commonwealth Environmental Protection Agency a direct oversight and assurance role in reporting on the implementation of conservation planning instruments, including threat abatement plans, recovery plans or proposed recovery strategies.

2.2 Ensure that national standards drive best practice reporting that enables regular independent rigorous appraisal of Australia's progress in abating listed threats, recovering threatened species and ecological communities and protecting other MNESs.

3. Better safeguard some of Australia's most important places

3.1 Specify clear processes and triggers for the Australian Government to rapidly intervene when areas of national and international environmental significance are not being protected or managed effectively. This should include expanding the definitions of 'action' under national environmental law to include a policy, plan or program of a government where these relate to the management of a National Heritage place, World Heritage property or wetland of international significance.

3.2 Develop national environmental standards that:

(a) place a proactive obligation on managers of spatially defined MNES (National Heritage places, World Heritage properties and Ramsar wetlands) for the effective protection of listed values and management of key threats

(b) require managers of spatially defined MNES to take action to prevent the exacerbation of key threatening processes, threats of national environmental significance (reform 1.2)r emerging threatening processes (reform 1.3) and to implement relevant national threat abatements plans

3.3 Reform National Heritage management principles to require more effective identification, management and abatement of key threats to the listed values of any national heritage place.

3.4 List Australia's national parks and reserves as an MNES and establish triggers for actions that would adversely impact their values

4. Strengthen regulation of high-risk in-country invasive species

4.1 List high-risk potential or emerging invasive species present in Australia and, in cooperation with states and territories, develop national regulations, where that is a feasible way to reduce the risks of establishment and spread.

4.2 Require the development and maintenance of a public database of species naturalised in Australia (native and non-native species) and make it a duty for government agencies to report naturalised species for listing

5. Strengthen regulation of live imports

5.1 Specify an objective for the live import functions along the lines of the following:

> Prevent the importation of live organisms to Australia that could:
>
> a) adversely impact native biodiversity; or
> b) facilitate or exacerbate the adverse impacts of other introduced organisms on native biodiversity.

Define in legislation the level of protection that should be applied to the consideration of a 'specimen suitable for live import' – for example:

> A specimen suitable for live import has:
>
> a) a negligible risk of establishing in the environment and adversely impacting on native biodiversity or facilitating the risk of another invasive species adversely impacting the environment, or
> b) a very low risk of adversely impacting native biodiversity and will have a net environmental benefit.

5.2 Define a 'regulated live specimen' to be comprehensive of all live organisms except for pathogens – therefore inclusive of live animals, plants and non-pathogenic fungi, algae and protists. Also specify that a live specimen permitted for import can exclude any new taxa, hybrids or genetic variants of that specimen.

5.3 Retain the precautionary principle and require consideration of climate change in decision-making about specimens suitable for live import.

5.4 Complement the lists of live specimens assessed as suitable for live import with a prohibited list – taxa, species, subspecies or variants assessed as unsuitable for live import.

5.5 Ensure the permitted lists for live imports under the EPBC Act and the Biosecurity Act remain current by legislating a review function that includes:

A. a requirement to review the inclusion of a specimen on the list suitable for live import if the Environment Department becomes aware of new information indicating the import of the specimen does not meet the proposed objective or acceptable outcome for live imports.
B. the capacity to review live specimens that have been accepted as permitted imports for 5 years or more to assess whether they remain suitable for live import.

Ensure that the assessment of live plants under the Biosecurity Act achieves outcomes consistent with the objective and acceptable outcomes of the national environmental law by a regular certificaton process (review of the methodology and representative decisions). If the outcomes are not consistent,

plant import assessments should be undertaken by the Environment Department until consistency is achieved.

5.6 Introduce a requirement to assess the risks of importing new taxa or genetic variants of existing established species where this is likely to boost the invasive potential of the species.

5.7 Strengthen transparency and accountability by:

(a) requiring the publication of all risk assessment guidelines and manuals used to inform decision-making under the Act

(b) requiring a statement of reasons by the decision maker for each live import decision and the publication of all supporting material

(c) expanding merits review to include decisions made in relation to live imports by either the Minister or their delegate.

6. Reform the Threatened Species Scientific Committee

6.1 Require the establishment of an independent scientific committee with appropriate scientific expertise, including an Indigenous member or members with relevant expertise. The specified types of expertise should not include socio-economic expertise (noting that socio-economic, legal and policy advice may be sought by the committee).

Specify that the scientific committee may create expert sub-committees to support the committee in fulfilling its expanded role.

Require that the Environment Minister ensures the scientific committee is sufficiently well resourced to fulfil its role and maintain up-to-date information on matters within its remit.

6.2 The tasks of the scientific committee should include efficiently and systematically assessing and listing key threatening processes, threats of national environmental significance and emerging threats, as well as nominated threatened species, important populations, ecological communities, proposed ecosystems of national importance, and areas of global or national importance.

Require the scientific committee to act consistently with the precautionary principle when deciding whether to list a key threatening process, threat of national environmental significance or emerging threatening process and whether to list a species, ecological community or other entity as threatened.

1. Strengthen Australia's approach to threat abatement

Strengthening Australia's threat abatement system is essential to overcome Australia's extinction crisis. Abating major threats to biodiversity is the only way to stop more and more species from becoming threatened and, in conjunction with species-specific recovery actions, to stop threatened species from heading towards extinction.

A stronger threat abatement system is particularly important for mitigating invasive species impacts. The likes of cats, foxes, deer, goats, rabbits, yellow crazy ants, gamba and buffel grass, lantana, myrtle rust and phytophthora cannot be stopped by a regulation or a protected area boundary. Abating their threats requires the national planning, research and collaborative management provided for by a functioning threat abatement system.

Additional information: see *Averting Extinctions: the case for strengthening Australia's threat abatement system*[3]

Reform 1.1. Comprehensive listing of threats

Require the comprehensive listing of threats to matters of national environmental significance (MNES) – including threatened species and ecological communities, World Heritage properties, National Heritage places and wetlands of international significance – on the advice of the Threatened Species Scientific Committee or an equivalent independent scientific body or process. Maintain the public nomination process to supplement threat listings.

It should be a matter of scientific endeavour to identify the major threats to Australian biodiversity rather than rely on an onerous, ad hoc process of nomination. The current KTP list contains major gaps, including some of the most severe threats to biodiversity. Despite good intentions, the novel biota KTP listing stymied invasive species listings rather than filled gaps because it did not or could not serve as the basis for threat abatement plans. The threat of nominated invasive species KTPs not assessed or rejected for listing – particularly invasive fish, feral deer and myrtle rust – have considerably worsened over the past decade (case studies 1–2, 4).

A comprehensive list of threats is an essential foundation for systematically prioritising and instigating abatement action. It will also save considerable resources and expedite listings. The list of threats should be regularly reviewed to ensure it remains up to date. The public nomination process should be retained to fill gaps and also help ensure the currency of the list.

Given the Commonwealth's responsibility for all MNES, there is no good reason to limit listings only to threats to species and ecological communities. Abating the threats to all relevant MNES is essential for achieving their protection, consistent with the objectives of the EPBC Act. Assessing the impacts of a threat on all relevant MNES is a better measure of the scale of a threat than just the impacts on particular species or ecological communities.

Case study 1. Invasive fish

A KTP nomination for *The introduction in Australian inland waters of native or non-native fish that are outside their natural geographic distribution* was placed on the Finalised Priority Assessment List in 2007 and

[3] https://invasives.org.au/publications/averting-extinctions/

assessed by the Threatened Species Scientific Committee as eligible for listing in May 2011. The Environment Department's website describes the threat as 'one of the major conservation issues in inland aquatic environments'. However, in November 2011 the Environment Minister rejected the scientific committee's advice and decided to not list this KTP.

The KTP nomination identified 9 threatened species listed under the EPBC Act impacted by introduced fish in 2007. In 2018 at 37 taxa on the threatened species list were significantly impacted (to a medium or high degree) by invasive fish.[4] Since then, another 15 fish taxa have been listed that are significantly threatened by invasive fish. Furthermore, 19 of 20 freshwater fish species recently assessed as likely to be extinct within 20 years (>50% likelihood) are significantly threatened by invasive fish.[5]

While the apparently growing threat of invasive fish is partly due to better information and the description of several new native fish species, there seems little doubt that far too little is being done to abate the escalating threats and that invasive fish would be a high priority threat under a revamped threat abatement system.

Case study 2. Feral deer

The Invasive Species Council nominated feral deer as a KTP in 2011. National recognition of the threat and federal leadership and coordination were needed to overcome the inaction by state governments that were protecting feral deer for the sake of hunters rather than managing them as a threat (feral deer are still protected in Victoria and Tasmania). But the nomination was refused for assessment because the nomination for an all-encompassing novel biota KTP was in preparation, which was intended to preclude the necessity for additional invasive species nominations.

Since then, the threat has escalated as deer have rapidly multiplied and spread. The cost and difficulty of managing them under the National Feral Deer Action Plan is now much greater than if action had been taken a decade ago.

Reform 1.2. A logical threats schema

Classify listed threats hierarchically as:

(c) Key threatening processes – overarching processes such as habitat loss and invasive species.

(d) Threats of national environmental significance – more-specific threats within each key threatening process such as land clearing for specific purposes and particular invasive species.

The current list of KTPs is a hodge podge of threats of different scales and severity, ranging from the very particular listing for beak and feather disease to the all-encompassing novel biota KTP. A logical scheme for threats will facilitate (a) systematic threat identification, (b) threat prioritisation and (c) tracking of threat abatement progress and reporting. It will facilitate identification of and responses to new threats and delisting of threats when abatement is achieved.

[4] Ward et al. 2021. https://onlinelibrary.wiley.com/doi/full/10.1002/ece3.7920

[5] Lintermans et al. 2020. https://www.publish.csiro.au/pc/pc19053

Reform 1.3. Emerging threats

Institute an 'emerging threatening process' (ETP) category of threat to facilitate urgent or precautionary interventions to prevent emerging threats from becoming entrenched threats. Require regular horizon scanning by the Threatened Species Scientific Committee (or equivalent to identify such threats.

Early action on looming or emerging threats is far more efficient and cost-effective than responding once a threat is entrenched. While the existing KTP criteria allow for the listing of emerging threats such as red imported fire ants, they have to be assessed as a threat to particular species or ecological communities, which can be difficult when a threat has not yet manifested or when there has not been time to gather sufficient evidence of the likely impacts. The current listing process is onerous and does not facilitate a rapid response.

The listing of emerging threats could be modelled on the provisions under the EPBC Act for a Minister to rapidly list Commonwealth Heritage or National Heritage if it is under immediate threat (ss. 324JL, 341JK). To facilitate timely interventions, the process for assessing and listing ETPs should be rapid and have a lower burden of proof than other threats, because evidence may be scarce and time may be short to intervene (see case study 3).

The Threatened Species Scientific Committee should be required to conduct and publish an annual analysis of whether there are emerging threats to the Australian environment not covered by the existing regulatory regime. This should be supplemented by an expedited nomination process to enable the immediate assessment of threats potentially requiring a rapid response.

For emerging invasive threats, one effective response may be to prohibit the keeping, transport and trade of certain species. This could be achieved under a provision such as the current s301A, which we strongly recommend be retained for facilitating responses such as this (see reform 1.7 and 4.1, case study 5).

Case study 3. Avian influenza in wildlife

Over the past 20 years, high pathogenicity avian influenza of subtype H5 (HPAI H5) has been killing millions of wild birds and thousands of wild mammals overseas. Australia and Antarctica are now the only continents free of the disease. As new strains arise, experts warn that it could arrive in Australia with migratory shorebirds, which have been infected overseas. Australia is well prepared for responding to HPAI infection in poultry with an AUSVETPLAN that has been implemented several times, but there is no plan for responding to infections in wild birds. Because HPAI H5 cannot be eradicated (and therefore would not trigger the National Environmental Biosecurity Response Agreement), it would be up to each state and territory government to manage responses.

The potential for HPAI to cause large scale mortality events would warrant listing as an emerging threatening process and the development of a national response plan setting out monitoring protocols, research priorities and disease management responses (such as removal of carcases to limit the spread of infection).

The lack of a plan for HPAI in wildlife exemplifies the current vacuum in national leadership on wildlife diseases that cannot eradicated (see case study 4 on myrtle rust). A process under national environmental law for listing and responding to nationally significant diseases could fill this vacuum.

Case study 4. Myrtle rust

A recent assessment found that 16 plant species are at imminent risk of extinction from myrtle rust, first detected in Australia in 2010 and subject to a delayed and failed eradication response. Government pathologists have conjectured that eradication may have succeeded if there had been a concerted response. A limited involvement of environmental agencies and stakeholders in that process has been identified as one of the weaknesses. Subsequent to the failed eradication response there was federal funding for a transition to management, most of which went to industry priorities.

Myrtle rust would undoubtedly have qualified as an emerging threatening process. Such a status in 2010 could have motivated a more concerted eradication response and the greater involvement or influence of environmental agencies and stakeholders in decision-making. If eradication nonetheless failed, listing as an emerging threat would have potentially provided the impetus for monitoring, research and management to avert or reduce the declines and potential species losses we now face.

Case study 5. An emerging biofuels industry

There have been plans to establish a biofuels industry in Australia, with proposed crops including serious weeds such as giant reed and jatropha. These plans to date have mostly been stymied by unfavourable economics rather than environmental policies.

Listing a proposed new use of invasive species as an emerging threat should facilitate the development of a policy to ensure that nationally consistent measures are in place before an industry becomes established and therefore much more difficult to regulate. It would prevent states and territories being played off against each other to prevent restrictive measures. A national response would have to be negotiated with the states and territories with potential measures including bans on high-risk species and requirements for bonds or insurance.

Reform 1.4. Threat abatement advice and plans

On listing a threat of any category, require the Threatened Species Scientific Committee to prepare a statement about the actions (management, research) and instruments (plans, policies, regulations) needed to abate the threat (to the extent that it can be delisted).

Streamline the process for preparing threat abatement plans and recovery plans, and reduce the timeframes in which they must be finalised. Better integrate threat abatement and recovery actions, including through new proposed recovery strategies.

Abating the threats of nationally significant invasive species (and other types of threats) is challenging – requiring a long-term commitment typically including research, management and policy responses. Requiring an independent initial assessment of what it will take long-term to achieve abatement is an important foundation to assist in the development of abatement plans, inform policy reform and track abatement progress.

ISC supports proposals to expand the range of conservation planning options in addition to threat abatement plans, including strategic national plans and regional recovery plans. We support the proposed establishment of recovery strategies, provided there is no diminishment of their legislative force.

Reform 1.5. Multiple threat abatement plans per KTP

Enable the development of multiple threat abatement plans for a listed Key Threatening Process.

This simple reform would remove a major impediment to the abatement of invasive species threats that are recognised only as part of the novel biota KTP.

Reform 1.6. KTPs as a matter of national environmental significance

List key threatening processes as a matter of national environmental significance and apply the referral and assessment framework to regulate actions likely to significantly exacerbate threats.

The referral, assessment and approval processes for controlled actions are widely regarded as the centrepiece of the EPBC Act but have been highly ineffective in preventing actions that exacerbate major threats to biodiversity in Australia – particularly invasive species, adverse fire regimes and climate change – and have been poorly applied for the other mega-threat, habitat destruction.

One major reason for the failure is the difficulty of linking threat-exacerbating actions to significant impacts on particular protected MNESs. For example, the planting of an invasive plant for pasture or a biofuel crop could lead to its escape from cultivation and spread, over several subsequent decades, which could eventually threaten listed species and ecological communities (case study 6). But which MNES would be impacted years or decades later may be difficult to predict, meaning the action is unlikely to be referred or assessed as a controlled action. Another weakness of an exclusive focus on protected MNES is it does not take into account the potential for actions to cause a species or ecological community to become threatened.

As far as we are aware, there haven't been any assessments of actions involving the proposed cultivation, keeping or release of an invasive or potential invasive species. The exception to this may be actions such as urban developments that result in an increased weed risk to nearby sensitive habitats or species.

Regulating actions likely to significantly exacerbate threats is the necessary complement to regulating actions that directly threaten specific protected MNES. A focus on threats is not a new approach under the EPBC Act, with 2 of the 9 current MNESs being threats – (a) nuclear actions and (b) coal seam gas and large coal mining impacts on water (the water trigger). The reasons for listing the latter are applicable for invasive species (as underlined):[6]

> Regulation is an appropriate public policy response to the potential risks associated with coal seam gas and large coal mining. For example, potential negative impacts on water of coal seam gas and large coal mining development <u>can take many years to manifest, be diffuse in their impact or be cumulative in character</u>. The <u>indirect line of causatio</u>n between such activities and their ultimate impacts is a powerful source of market failure.

There would need to be exemptions for actions that are already effectively assessed under national law, such as the importation of live organisms.

[6] https://www.dcceew.gov.au/sites/default/files/documents/water-trigger-review-final.pdf

This provision could be operationalised through the development of trigger criteria for each key threatening process, akin to the Australian Government Significant Impact Guidelines. As new KTPs are listed, trigger thresholds would be identified to ensure appropriate regulatory coverage.

Case study 6. Breeding new weeds

One significant gap in environmental regulation across Australia is a frequent failure to assess the potential environmental impacts of new crop and pasture breeds that could exacerbate the invasive harm of existing weeds.

In 1999, the Victorian Government released and promoted a new variant of tall wheat grass (Dundas) as a pasture grass for saline-affected areas. This extremely versatile, hardy and flammable grass is one of the most serious weeds in temperate Australia. While it could be predicted that it would be environmentally harmful (it was assessed as a 'very high' weed risk for Victoria), linking the action of release to significant impacts on particular threatened species or ecological communities in future decades would be difficult, given the timeframe and many additional actions by unknown other parties in unknown locations that would bring about the harm. If assessed under the EPBC Act, it wouldn't take account of the unlisted species or ecological communities tall wheatgrass could cause to become threatened.

In 2023, a company applied to the Gene Regulator to conduct field trials of a new genetically modified perennial ryegrass that would likely be more competitive than existing variants. Perennial ryegrass is already a serious environmental weed, including in listed ecological communities, and yet the draft assessment by the Gene Regulator proposed to permit the field trials. We argued in a submission that the application should be referred for assessment under the EPBC Act given the potential for the field trial to result in escape of the GM variant and for the variant to exacerbate the impacts of the weed in listed ecological communities. However, assessing the hypothetical future impacts on just a few listed ecological communities would not permit a full consideration of the potential impacts of a more invasive perennial ryegrass. There is no precedent to suggest that it would be assessed as a controlled action. Fortunately, the application has now been withdrawn.

Reform 1.7. Policy measures for abating invasive threats of national environmental significance

List invasive species and develop regulations under provisions equivalent to those of s301A of the EPBC Act where this will facilitate nationally coordinated abatement of key threatening processes and threats of national environmental significance.

For some invasive species listed as key threatening processes, the threat is facilitated or escalated by inadequate or inconsistent regulation by states and territories. That has been the case particularly for escaped garden plants and pasture grasses. It is likely to impede the abatement of several other invasive threats that would be listed under a comprehensive regime.

As was done for weeds of national significance, the states and territories could agree to regulate the sale, transport and use of invasive species designated as threats of environmental significance – if that is assessed to be an efficient or essential way of mitigating threats. However, a state-by-state approach is often cumbersome, inefficient and inconsistently applied. It would be more efficient – and consistent with the national responsibility for KTPs – for nationally consistent approaches to listed threats of national environmental significance to be agreed and implemented under s301A-type regulations, and then legislatively mirrored by the states and territories.

Consistent national regulations combined with systematic listing of threats (reform 1.1) would achieve a much more efficient approach to abating threats (where regulation is effective) and therefore reduce the invasive harm and abatement costs.

It would also help with addressing invasive species threats that are neglected by state and territory governments for invasive species valued commercially or by particular sectors. For example, it took years for state/territory governments to ban gamba grass because it was valued as a pasture grass – delays that have resulted in a much more difficult and costly problem (case study 7). Likewise, governments are reluctant to ban highly invasive species such as giant reed because it is regarded as a potential biofuel crop. Developing a national process for negotiating risk-based approaches to nationally significant threats would be an extremely valuable function of the threat abatement system and overcome the current neglect of high-risk species that are valued by certain sectors at the expense of the national interest.

Case study 7. Gamba grass and the slow, expensive road to ban and act to abate one of Australia's most dangerous weeds

Gamba grass illustrates the typical progression of policies on high-risk invasive species valued by certain sectors for economic or social reasons. Warnings about invasion risks are typically ignored for years or decades before governments are finally compelled to act by public concern about damage, by which time the species has spread and become much more difficult and expensive to control.

Gamba grass was introduced into Australia as a pasture grass in 1931.[7] The Kent variety was commercially released after years of breeding by government scientists in the Northern Territory in 1978. The weed risks were obvious – the information submitted for the registration of the cultivar described downwind spread. Large-scale planting started in Queensland after 1983. There was intense concern and conflict about gamba grass (and other pasture grasses) during the 1990s and 2000s. Finally, it was declared a prescribed weed in 2008 in the 3 northern jurisdictions. It was listed as a key threatening process in 2009 and a weed of national significance in 2012.

A systematic listing of threats of national environmental significance and the development of abatement strategies, including policy reform, could in future be used to avoid the policy paralysis that prevented effective action on gamba grass for many years and has left Australians with a very difficult and expensive problem. The costs of delaying abatement are evident in Litchfield National Park which could face ecosystem collapse in the near future due to delayed management of gamba grass.

An invasion history in a high-value protected area, Litchfield National Park[8]

- 1991: no records when the park was established
- 1995: first records in the park
- 2014: 20,250 ha infested
- 2020–21: 29,713 ha infested (more than doubling the cost of achieving the park's weed management goals)
- 2030: predicted spread to 42,388 ha (30% of the park) without active management

'Ecosystem collapse of invaded ecosystems is a potential endpoint if this invasion continues and further degrades native ecosystems.'

[7] Settefield et al. 2018. https://www-publish-csiro-au.ez.library.latrobe.edu.au/pc/pdf/PC18028

[8] Rossitor-Rachor et al. 2023.
https://researchers.cdu.edu.au/files/69562242/1_s2.0_S0301479722023581_main.pdf

2. Improve assurance oversight of threat abatement and conservation planning

One of the principles specified in the 1997 Heads of Agreement on the environment is about transparency and accountability: that 'decision-making processes, accountability for decisions and delivery of policy and program outcomes should be clear and public'. These are mostly missing in the current threat abatement system.

There are no requirements for achieving any particular abatement targets, and no consequences for decision-makers who fail to apply the available tools to abate threats. The only public reporting on threat abatement, apart from 5-yearly reviews of abatement plans (often delayed or not done), are 5-yearly state of the environment reports.

Reform 2.1 Assurance and oversight

Accord the new Commonwealth Environmental Protection Agency a direct oversight and assurance role in reporting on the implementation of conservation planning instruments, including threat abatement plans, recovery plans and proposed recovery strategies.

The Government has committed to a new EPA that would provide independent oversight of regulatory activities and the implementation of plans. The EPA must also have an oversight and assurance role for conservation planning instruments. One of the major failings of the current system of threat abatement and recovery planning is the lack of implementation and accountability. Ensuring that the EPA reports independently to parliament on the implementation of conservation planning instruments will ensure increased transparency and improved accountability of the conservation planning system.

Reform 2.2 Reporting standards

Ensure that national standards drive best practice reporting that enables regular independent rigorous appraisal of Australia's progress in abating listed threats, recovering threatened species and ecological communities and protecting other MNES.

The government has committed to the establishment of the National Environmental Standard for Data and Information and to be responsible for its implementation. It is critical that this standard includes specific requirements for reporting on the implementation of conservation planning mechanisms, and that this informs the new EPA's approach to plan assurance and oversight.

3. Better safeguard some of Australia's most important places

Some of Australia's most precious places are under sustained threat or at great risk from the impact of invasive species – including feral horses on the Australian Alps, myrtle rust in the world heritage forests of the Wet Tropics and Lord Howe Island and the growing numbers of feral deer in the Tasmanian wilderness. In all these cases, there is a clear national interest to drive improved management of invasive species. To achieve Australia's goals and obligations to protect the values of internationally and nationally significant places requires measures to strengthen the capacity of the Australian Government to compel or motivate better protection of Ramsar wetlands, National Heritage places and World Heritage properties.

Reform 3.1. Definition of an 'action' for important places

Specify clear processes and triggers for the Australian Government to rapidly intervene when areas of national and international environmental significance are not being protected or managed effectively. This should include expanding the definitions of 'action' under national environmental law to include a policy, plan or program of a government where these relate to the management of a National Heritage place, World Heritage property or wetland of international significance.

The current definition of an action under the EPBC Act limits the potential for Australian Government oversight of areas of national and international importance. This proposed reform would clarify the remit of the Australian Government in relation to management plans for key MNES. It would provide a basis for intervention when a state or territory government proposes to manage an MNES site (as expressed in a plan, policy or program) in ways that are inconsistent with maintaining the site values or that conflict with national management principles or standards.

Reform 3.2. National environmental standards

Develop national environmental standards that:

(c) place a proactive obligation on managers of spatially defined MNES (National Heritage places, World Heritage properties and Ramsar wetlands) for the effective protection of listed values and management of key threats

(d) require managers of spatially defined MNES to take action to prevent the exacerbation of key threatening processes, threats of national environmental significance (reform 1.2) or emerging threatening processes (reform 1.3) and to implement relevant national threat abatement plans.

National environmental standards for the management of listed MNES properties should reflect Australia's obligations to protect and maintain the values of MNES properties. Both the Samuel Review and the Government's Nature Positive Plan aim for national standards to have a normative effect on non-regulatory decision making. It will be critical that this intent is realised if national standards are to deliver 'nature positive' outcomes, especially in relation to improving the management of key MNESs. Strong national standards will provide a clear signal to land and sea managers on expected conservation outcomes and management expectations.

Reform 3.3. National Heritage management principles

Reform National Heritage management principles to require more effective identification, management and abatement of key threats to the listed values of any national heritage place.

To clarify expectations, management principles need to be explicit and comprehensively address the threats that need to be managed.

Reform 3.4. Triggers for national parks and reserves

List Australia's national parks and reserves as an MNES and establish triggers for actions that would adversely impact their values

Much of Australia's conservation efforts and successes are centred on the protected area estate. This measure would make more meaningful the protection meant to be afforded these properties. While many serious invasive threats to protected areas have come from the natural spread of long-established species, others have arisen from the deliberate planting or release of invasive species in the vicinity of protected areas. Establishing a 'national parks trigger' under national environmental law was a long-held policy of Australian Labor, both in government and opposition.

4. Prevent high-risk introduced species from becoming threats

For more than 20 years, the Australian Government has had a powerful regulatory tool it could use to substantially boost national efforts to prevent and limit invasive species' threats to biodiversity. Section 301A of the EPBC Act enables the making of regulations that could:

- provide for the establishment of a list of non-native species which may or would be likely to threaten biodiversity in Australia
- regulate or prohibit the import of species on the list, and the trade of species on the list between Australia and other countries and between state and territory jurisdictions within Australia
- regulate or prohibit actions involving species on the list
- provide for making plans to eliminate, reduce or prevent impacts of the listed species on Australia's biodiversity.

Despite recognition in several reviews and inquiries that there are substantial gaps in Australia's regulation of domestic trade and other actions involving invasive species, successive governments have failed to use s301A.

The Environment Department confirmed in 2004 that the Commonwealth has the necessary head of power to develop regulations under s301A:

> Legal advice indicates that regulations could be made under Section 301A to control species listed under Section 301A(a) by legislating for offences relating to the transport or possession of a listed species that would be enforceable under the EPBC Act.[9]

The rationale for the inclusion of s301A-like provisions still stands – 'to provide a lead to the States and Territories, whose efforts are currently fragmented and undermined by a lack of coordination', as the Senate References Committee stated in 2004.[10]

Ideally, provisions equivalent to s301A in the new environmental law would be applied systematically to list, categorise, prioritise and regulate invasive species in appropriate response categories (e.g. prevention, eradication, containment and control). One of the highest-priority gaps that should be addressed is the regulation of high-risk species present in Australia but not yet invasive (not established or, if established, eradicable or containable).

A stronger role for the Commonwealth in this area is consistent with the roles specified for the Commonwealth under the Intergovernmental Agreement on Biosecurity (section 34):

> (b) providing national leadership for strategic biosecurity issues, including responses to exotic pests and diseases and management of nationally significant established pests and diseases
>
> (c) providing legislative, capacity and capability support to States and Territories, as required, to ensure the effective management of biosecurity risks
>
> (i) fulfilling Australia's obligations under international agreements and strategies.

[9] Senate References Committee 2004.
https://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Environment_and_Communications/Completed_inquiries/2004-07/invasivespecies/report/c07

[10] Senate References Committee 2004. Ibid.

The proposed regulations could also be underpinned by an intergovernmental environmental agreement focused (in part) on threat abatement.

Reform 4.1. National regulations for high-risk in-country potential invaders

List high-risk potential or emerging invasive species present in Australia and, in cooperation with states and territories, develop national regulations, where that is a feasible way to reduce the risks of establishment and spread.

Already present within Australia are numerous animal and plant species that could become the next major invasive threats to biodiversity. Some are legal to cultivate or keep in some or all jurisdictions despite the risks. Others are illegal yet being sold openly. If they were the result of an illegal importation, they can be prosecuted under the EPBC Act, but this rarely occurs and it would be impossible for those trading or keeping species to know in many cases. Many are not regulated by the states and territories.

Several reviews and inquiries have noted the inconsistent and full-of-gaps regulation of non-native plants by the states and territories, including the first reviewer of the EPBC Act:

> They represent a vast reservoir of potential future problems. Movement of these species within Australia is effectively unconstrained and response to the issues they raise varies substantially between the States and Territories.[11]

A just-published analysis of the trade in non-native pets warns that current management 'falls short of a system that comprehensively reduces known and/or identifiable risks'.[12] At least 667 non-native species are being traded online and the majority are not being regulated by the states or territories. Even high-risk species that are regulated or prohibited by state or territory governments are not done so consistently across jurisdictions. Of the 667 species, 42% (279 species) are not permitted to be imported into Australia.

Deficiencies that need to be addressed include:

- Some misalignment between risk and species' status: Some high-risk species are permitted for keeping and trading in some or all jurisdictions due to legacy issues or different policies.
- Confusions due to inconsistencies and multiple lists: Different laws and lists in 9 different jurisdictions make it difficult for even well-intentioned buyers and sellers to understand their obligations.
- Inadequate enforcement: There appears to be trading of some high-risk potentially illegal species (depending on when they were imported). Online trading makes state-by-state laws increasingly difficult to enforce. Inconsistencies between import lists and state/territory lists make it difficult to enforce the former.
- Lack of national coordination: There is no nationally coordinated concerted program to reduce the risk of high-risk species from establishing in the wild.

Consistent with Australia's risk-based approach to biosecurity at the border, we need a nationally consistent risk-based approach to species already in the country. Particularly with the rise in online

[11] Hawke 2009. https://www.dcceew.gov.au/environment/epbc/our-role/review/epbc-review-2008
[12] Toomes et al. 2023. https://linkinghub.elsevier.com/retrieve/pii/S0006320723001416

trading, it is not feasible to address these risks only at a state and territory level (case study 8). Compare the approach taken to environmentally harmful chemicals. If chemicals are assessed as a threat to environmental or human health, the Australian Pesticides and Veterinary Medicines Authority can ban their sale or regulate how they are used and this is mirrored in state and territory regulations.

One recent advance in environmental biosecurity has been the development of the National Priority List of Exotic Environmental Pests, Weeds and Diseases (EEPL) as a basis for strengthening measures to stop the entry of new harmful species into Australia. We need an equivalent national priority list of species already in the country that could become the next invasive threats of national significance. Species not permitted for import should be on the list unless there are overriding strategic reasons to exclude them. Non-native species identified as emerging threatening processes (reform 1.3) could be added to the list as needed. A blanket ban on keeping and trading all high-risk species may not be feasible, so the regulations could encompass different strategies, such as licenced keeping and requirements for insurance, to reduce the risks of escape and establishment of high-risk species. Laws to ban the advertising of prohibited species would bolster authorities' capacity to enforce prohibitions.

Case study 8. Trade and keeping of high-risk pets

Currently, it is easy to buy a wide range of animals in Australia that have the potential to escape into the wild and become invasive – particularly since the advent of online trading.

Arowana and bichir are not permitted imports, but can easily be bought in Australia (there were 3 advertisements for arowana and 7 for bichir on Gumtree on 26 April). Toomes et al. also recorded advertisements for arowana in their assessment of online trading.[13] The situation is not helped by the inconsistent status of these species, permitted in state/territory jurisdictions despite having been assessed as unsuitable for import. The confusion about the status of such species is evident on online forums with potential buyers not knowing what is legal and not knowing where to find lists for particular states/territories. They would find it difficult or impossible to determine whether a particular arowana or bichir specimen is legal or not to keep.

Ferrets have been assessed as having an 'extreme' risk of establishment in Australia and an 'extreme' consequences if established. They cannot be imported, yet can be kept as pets in states other than Queensland and the Northern Territory; they must be licensed in the ACT. Ferrets have been frequently sighted in the wild and have established in Tasmania (juveniles were seen and some were trapped), but it's uncertain whether those populations have persisted. The decline of Tasmanian devils probably makes it more likely that ferrets will establish in Tasmania and persist in future. It should be a high national priority to prevent the establishment of another exotic predator in the Australian environment.

Toomes et al. exemplify the inconsistencies in Australian laws with the Indian ringneck parrot, prohibited in Western Australia and Tasmania but not the other states.[14]

It is not realistic to expect online sellers and buyers to check each state and territory law before trading. Australia needs one prominent national list of banned animals rather than a multitude of different lists that are difficult to find. Consistent lists across the states and territories would assist with enforcement. Also needed are national regulations prohibiting the advertising of prohibited species.

[13] Toomes et al. 2023. https://linkinghub.elsevier.com/retrieve/pii/S0006320723001416

[14] Toomes et al. 2023. Ibid.

Reform 4.2. A national database of naturalised species

Require the development and maintenance of a public database of species naturalised in Australia (native and non-native species) and make it a duty for government agencies to report naturalised species for listing.

There is no authoritative list of naturalised species in Australia. Various, often inconsistent lists are published with research papers or held by state/territory governments for particular groups of species. The compilation and maintenance of such a list could be outsourced to the Atlas of Living Australia.

This is fundamental information necessary to understand the state of invasions, inform assessments of proposed imports and serve as a basis for assessing priorities for prevention, eradication and management. It will provide a benchmark for measuring Australia's biosecurity performance – for example, against Target 6 of the Kunming-Montreal Global Biodiversity Framework, which requires (amongst other measures) preventing the introduction and establishment of priority invasive alien species and reducing the rates of introduction and establishment of other known or potential invasive alien species by at least 50%.

5. Strengthen regulation of live imports

The regulation of live imports is an important, but poorly known, function of the EPBC Act. These provisions play a vital role in preventing the importation of new animals that could be harmful to native biodiversity and have the potential to fulfill the same function for plants and other live organisms. It is well accepted that it is far more efficient and cost-effective to prevent the introduction of new invasive species than try to eradicate or manage them if they establish. The live import provisions should be retained and strengthened in new environmental laws. They serve an important complementary function to provisions under the *Biosecurity Act 2015* by focusing on protecting matters of national environmental significance (MNES) and other environmental values to achieve Australia's national and international environmental objectives, including obligations under the Convention on Biological Diversity.

Reform 5.1. An objective and an acceptable outcome

Specify an objective for the live import functions along the lines of the following:

> Prevent the importation of live organisms to Australia that could:
>
> a) adversely impact native biodiversity; or
> b) facilitate or exacerbate the adverse impacts of other introduced organisms on native biodiversity.

Define in legislation the level of protection that should be applied to the consideration of a 'specimen suitable for live import' – for example:

> A specimen suitable for live import has:
>
> a) a negligible risk of establishing in the environment and adversely impacting on native biodiversity or facilitating the risk of another invasive species adversely impacting the environment, or
> b) a very low risk of adversely impacting native biodiversity and will have a net environmental benefit.

The current provisions are not explicit about the objective of regulating live imports and do not specify an acceptable outcome. Therefore, it's not clear what 'suitable for live import' means in practice.

Point b) of the proposed objective is in recognition that some invasive species may not directly cause harm but facilitate or exacerbate the harm caused by existing invasive species. One example is the exotic yellow lac scale insect that sustains yellow crazy ants on Christmas Island. It also encompasses the risk that introducing additional variants of an established or invasive species can boost invasiveness.

Negligible risk is an appropriate standard for live imports given the great risks they bring, the limited information about impacts and the potential propagation pressure from imports. The proposed degree of tolerated risk falls within the range implied by the Appropriate Level of Protection specified in the Biosecurity Act 2015, which is 'aimed at reducing biosecurity risks to a very low level, but not to zero'.

The evidence of a continued stream of new invaders in Australia's environment suggests that the ALOP has not been applied rigorously enough or that risk mitigation measures have not been applied with sufficient environmental awareness to achieve outcomes consistent with Australia's national and international environmental targets and objectives.

Given the lack of research on many potential invaders, a highly precautionary approach is warranted, particularly for known high-risk groups such as predators and freshwater fish and because of the risk of introducing new exotic diseases, a major driver of declines and extinctions in Australia. Built into the application of precaution should be recognition that almost any species brought into Australia is at risk of escaping into the wild. The risk is extremely high for aquarium fish and significant for all animals except those kept in secure facilities.

Given that all live animal imports entail risk – more than most other import categories due to the persistent potential for the imported animals or their progeny over subsequent generations to escape into the wild or to introduce new pathogens – imports of live animal should be limited as much as possible, particularly for imports that are for trivial reasons such as the desire for new pets.

Reform 5.2. Definition of a 'regulated live specimen'

Define a 'regulated live specimen' to be comprehensive of all live organisms except for pathogens – therefore inclusive of live animals, plants and non-pathogenic fungi, algae and protists. Also specify that a live specimen permitted for import can exclude any new taxa, hybrids or genetic variants of that specimen.

The definition of a live specimen is currently restricted to 'a live animal or a live plant', although in effect live plants are also excluded (because any plant permitted under the Biosecurity Act is permitted under the EPBC Act). There are no good conservation reasons to restrict the live import functions to animals, given the great environmental harm caused by invasive plants and the potential harm of invasive fungi, algae and other organisms. The value of the second recommendation is explained under reform 5.6.

Reform 5.3. The precautionary principle and climate change considerations

Retain the precautionary principle and require consideration of climate change in decision-making about specimens suitable for live import.

Retaining the precautionary principle is essential given the limited information available about most potential invasive species threats to the natural environment. It is also important in recognition that Australian ecosystems and species are typically different from those elsewhere, which means that invasive species with limited impacts elsewhere may have significant impacts here. In contrast, there is far more information about invasive species threats to crops and livestock because the same species are farmed all over the world, interactions are much simpler and there has been far more research on these species.

Decisions about live imports should consider conditions far into the future because, once introduced, a non-native species is likely to be permanently present in Australia. Climate change, in particular, could make future conditions much more conducive to the establishment and invasion of

certain species introduced today. Climate change predictions to at least 2100 should be taken into account in live import decisions.

Reform 5.4. A prohibited list

Complement the lists of live specimens assessed as suitable for live import with a prohibited list – taxa, species, subspecies or variants assessed as unsuitable for live import.

The provisions currently only allow for the listing of permitted specimens, which means that applications for imports previously assessed and known to be unsuitable have to be assessed, sometimes over and over again. A prohibited list will provide greater clarity for those wishing to import species and prevent the waste of public resources assessing applications. The inclusion of a prohibited list is consistent with the approach under the Biosecurity Act.

Reform 5.5. Review of permitted imports

Ensure the permitted lists for live imports under the EPBC Act and the Biosecurity Act remain current by legislating a review function that includes:

A. a requirement to review the inclusion of a specimen on the list suitable for live import if the Environment Department becomes aware of new information indicating the import of the specimen does not meet the proposed objective or acceptable outcome for live imports.
B. the capacity to review live specimens that have been accepted as permitted imports for 5 years or more to assess whether they remain suitable for live import.

Ensure that the assessment of live plants under the Biosecurity Act achieves outcomes consistent with the objective and acceptable outcomes of the national environmental law by a regular certification process (review of the methodology and representative decisions). If the outcomes are not consistent, plant import assessments should be undertaken by the Environment Department until consistency is achieved.

Some species on the live import list are likely to be invasive and would probably not be accepted as suitable for live import if assessed today. However, there are no triggers for reviewing species on the permitted list to remove unsuitable species – either on the basis of new information (such as evidence of invasive impacts) or an altered risk profile (due to climate change, for example) or because assessment methods have changed. It is currently rare for a species to be removed from a permitted list. Therefore, to ensure that permitted imports continue to meet the objective of th national environmental law, it is important to institute regular reviews of permitted live imports. The proposed reviews may result in additions to the proposed prohibited list of live imports or altered conditions for imports.

The proposed review function for plants would require adding an exception to s303EB(6) along the following lines:

> Part 1 of the list is taken to include a live plant the introduction of which into Australia is not inconsistent with the Biosecurity Act except for organisms listed as specimens unsuitable for live import.

While it would be ideal for all proposed imports of live organisms to be assessed under the EPBC Act, to do this for all live plant imports would require substantial new resources and overlap work by the biosecurity agency. Instead, this recommendation is focused on ensuring that the assessments under the Biosecurity Act achieve the objectives of the national environmental law by (a) the proposed review function and (b) a regular certification process. This is in recognition that the objectives and standards applied under the environment law differ from those under the Biosecurity Act and may sometimes result in a different interpretation of what is suitable for live import.

Reform 5.6. The risks of new variants

Introduce a requirement to assess the risks of importing new taxa or genetic variants of existing established species where this is likely to boost the invasive potential of the species.

By requiring the assessment of hybrids proposed for import, the Environment Department has recognised the heightened invasion risks of introducing new genetic variants of existing introduced animals. But such risks extend beyond hybrids to any genetic variant that could increase the potential for an introduced species to become invasive or more invasive or better adapted to changing climatic conditions. The regulation of imports should be based on a comprehensive rather than partial consideration of risk.

There are 2 broad categories of risk associated with the importation of new genetic material – those arising directly from new more invasive variants and those arising from the interbreeding of different genetic variants. The risks include (a) increasing the chance of introducing a preadapted genotype, (b) increasing the chance of establishment with outcrossed species, (c) increasing genetic variation for particular adaptive features and (d) increasing the likelihood of adaptive evolution (for example, to climate change).[15]

Some highly invasive species have become a problem only after multiple introductions from different sources, which increase the potential for adaptations and mutations that boost their competitiveness, fecundity, or drought resistance, for example. A US study found that multiple introductions of the serious wetland weed canary reed grass (*Phalaris arundinacea*) had resulted in genetic reshuffling and recombination that gave rise to novel highly invasive genotypes – with higher genetic diversity in its invasive US range than in its native European range.[16] An equivalent example in Australia is Paterson's curse, which has invaded over 30 million hectares. It is self-incompatible in its native range but self-compatible in Australia and seedling establishment and seedbank incorporation are much higher in Australia.[17]

One challenge is to identify the taxa and variants of a species already naturalised or present in Australia. The lack of a centralised source of information about naturalised species in Australia is a deficiency addressed in reform 4.2.

[15] Wilson et al. 2009. https://www.sciencedirect.com/science/article/abs/pii/S0169534709000202

[16] Lavergne and Molofsky 2007. https://www.pnas.org/doi/abs/10.1073/pnas.0607324104

[17] Shaik et al. 2022. https://link.springer.com/chapter/10.1007/978-3-030-89684-3_6

Reform 5.7. Transparency and accountability

Strengthen transparency and accountability by:

(d) requiring the publication of all risk assessment guidelines and manuals used to inform decision-making under the Act
(e) requiring a statement of reasons by the decision maker for each live import decision and the publication of all supporting material
(f) expanding merits review to include decisions made in relation to live imports by either the Minister or their delegate.

Commendably, the department publishes reports on which import decisions are based even though there is no requirement to do so. We recommend mandating that and other measures to optimise transparency and accountability.

6. Reform the Threatened Species Scientific Committee

An independent scientific committee is essential to engender public trust in and ensure the effective operation of biodiversity laws. The current Threatened Species Scientific Committee plays a critical role in identifying and assessing key threatening processes and threatened species and ecological communities and driving abatement and recovery. The Committee's role and functions must be maintained, strengthened and expanded if the new legislation is to facilitate the government's achievement of its commitment to no new extinctions.

Reform 6.1 An independent scientific committee with sufficient resources

Require the establishment of an independent scientific committee with appropriate scientific expertise, including an Indigenous member or members with relevant expertise. The specified types of expertise should not include socio-economic expertise (noting that socio-economic, legal and policy advice may be sought by the committee).

Specify that the scientific committee may create expert sub-committees to support the committee in fulfilling its expanded role.

Require that the Environment Minister ensures the scientific committee is sufficiently well resourced to fulfil its role and maintain up-to-date information on matters within its remit.

The scientific committee fulfills such a fundamental role in the operation of national environmental law that it is vital they be well staffed and resourced. The proposed expansion of the committee's role will require additional expert capacity that can be obtained by the creation of sub-committees. One such sub-committee could focus on the identification and assessment of threats key threatening processes, emerging threatening processes and threats of national environmental significance, and conduct regular horizon scanning to identify emerging threats.

Reform 6.2 Committee roles and responsibilities

The tasks of the scientific committee should include efficiently and systematically assessing and listing key threatening processes, threats of national environmental significance and emerging threats, as well as nominated threatened species, important populations, ecological communities, proposed ecosystems of national importance, and areas of global or national importance.

Require the scientific committee to act consistently with the precautionary principle when deciding whether to list a key threatening process, threat of national environmental significance or emerging threatening process and whether to list a species, ecological community or other entity as threatened.