Exposure draft of the Biosecurity Bill 2012
A submission from Environment NGOs

Invasive Species Council

EXPOSURE DRAFT OF THE BIOSECURITY BILL 2012: A SUBMISSION FROM ENVIRONMENT NGOS

24 OCTOBER 2012

This submission was prepared by the Invasive Species Council and is endorsed by the following organisations.

Australian Conservation Foundation	Dr Paul Sinclair	p.sinclair@acfonline.org.au
Australian Network for Plant Conservation Inc	Dr David Coates	anpc@anpc.asn.au
Birdlife Australia	Charlie Sherwin	charlie.sherwin@birdlife.org.au
Colong Foundation for Wilderness	Keith Muir	keith@colongwilderness.org.au
Conservation Council ACT Region	Claire Henderson	director@consact.org.au
Conservation Council South Australia	Tim Kelly	tim.kelly@conservationsa.org.au
Environment Centre, NT	Dr Stuart Blanche	ecnt@iinet.net.au
Environment Victoria	Kelly O'Shanassy	kelly.oshanassy@environmentvictoria.org.au
Foundation for Australia's Most Endangered Species Ltd	Cheryl Hill	cheryl.hill@fame.org.au
Island Conservation	Dr Ray Nias	ray.nias@islandconservation.org
Island Rescue Australia	Derek Ball	derek.ball@reefcatchments.com.au
National Parks Australia Council	Christine Goonrey	cgoonrey@grapevine.com.au
Nature Conservation Council NSW	Pepe Clark	pclarke@nccnsw.org.au
Queensland Conservation	Toby Hutcheon	coord@qccqld.org.au
Queensland National Parks Association	Paul Donatiu	pdonatiu@npaq.org.au
Victorian National Parks Association	Matt Ruchel	mattruchel@vnpa.org.au
Wildlife Queensland	Des Boyland	desboyland@wildlife.org.au

For further information or comments, contact Andrew Cox, President ,Invasive Species Council: andrewcox@invasives.org.au, phone 0438 588 040.

TABLE OF CONTENTS

SUMMARY

As a replacement for the century-old *Quarantine Act 1908*, the *Biosecurity Bill 2012* represents a rare opportunity to bolster Australia's capacity to protect the environment from invasive species, a major cause of extinctions, declines and degradation.

Australian biosecurity has many world-leading features, and our agricultural industries enjoy trade advantages due to freedom from many pests and diseases. But our environment has been badly damaged by invasive animals, weeds and diseases; and we are a world leader in invasive threats to biodiversity. More than 70% of 1700 species listed as nationally threatened and more than 80% of listed ecological communities are imperilled by introduced animals, plants or diseases. Australia's most recent State of the Environment report gave the worst possible ratings for invasive species impacts on biodiversity: "very high" and "deteriorating", and found that management outcomes and outputs are "ineffective". The deteriorating trend is due to both new invaders, such as myrtle rust and Asian honeybees, and the spread of already established species.

Environment NGOs support the 'one biosecurity' approach recommended by the 2008 Beale review that envisions a seamless cross-sectoral, cross-jurisdictional approach to biosecurity. But protecting the natural environment differs in many ways from protecting industry assets and requires an ecological approach to biosecurity. Environmental biosecurity cannot just be a bolt-on to existing industry approaches. Biodiversity values at stake far outnumber industry assets, the scale and complexity of threats are far greater, knowledge is much sparser, predictability of impacts is much lower, and management options are more constrained.

The creation of new biosecurity law provides the opportunity to remove the '*ad-hocery*' resulting from a century of amendments to the Quarantine Act and to design a system that delivers a cohesive national approach and addresses major environmental priorities.

In this summary, we initially present a brief verdict on the Biosecurity Bill and evaluate its potential to address environmental priorities, then we list the main strengths, weaknesses and priority reforms, and finally we summarise the issues and list all recommendations.

A BRIEF VERDICT ON THE BIOSECURITY BILL

The Biosecurity Bill 2012 provides potential for more robust environmental biosecurity. The inclusion of the Biodiversity Convention in the Objects provides the direct legal basis for measures to "prevent the introduction of, control or eradicate those alien species which threaten ecosystems, habitats or species" (Article 8(h)).

In general, the Biosecurity Bill provides an expanded framework of biosecurity powers. There are a few clear environmental advances such as the national system for regulating the discharge of ballast water and sediment. We cannot evaluate the potential effectiveness of many provisions due to a lack of detail within the legislation, only some of which will become available in subordinate legislation or policy.

But the model of decision-making under the Bill is flawed. This undermines the potential to achieve effective environmental biosecurity by systematic application of biosecurity tools and powers for conservation purposes. In opposition to recommendations by the 2008 Beale review, the Biosecurity Bill maintains biosecurity functions within the Department of Agriculture, Fisheries and Forestry (DAFF) rather than establishing an independent statutory authority. Instead of the recommended expert biosecurity commission and independent director, most decisions are to be made by the Director of Biosecurity, who is also the Secretary of DAFF and has potentially conflicting roles in trade and industry promotion.

Transparency is crucial to ensure that decision-making and policy setting in biosecurity are evidence-based and focused on risk priorities – both because of the valuable contribution that community members can make (expert information and innovative policy ideas, for example) and to limit the potential for political or commercial influences. But most decisions under the Bill (including for imports of new species/taxa)[1] are opaque, with no requirement for community consultation, publication of assessments, third party appeal rights or merits review/auditing.

Although biosecurity risk is intended to be the basis of decision-making, there are insufficient checks to ensure that decisions will be consistently risk-based and derived from the best available environmental evidence. There is no requirement for expert review of decisions. Only import applicants will have the legal right for review. The Inspector-General of Biosecurity will not be able to audit decisions, only processes.

There are also many measures that are discretionary and not required to be systematically applied to highest priority risks. There is no requirement for risk to be the basis for determining priorities for Biosecurity Import Risk Analyses (BIRAs). They are more likely to be focused on trade and economic or political priorities. The Agriculture Minister but not the Environment Minister has the power to direct that a particular BIRA be conducted.

There is no guarantee that other biosecurity measures, such as control orders and biosecurity zones, will be directed to high priority environmental risks, because they will be at the discretion of the Biosecurity Director. They will have budgetary implications for DAFF, so such measures are more likely to be used for issues of highest priority for DAFF (particularly in times of budgetary constraint) rather than issues of high environmental priority. There is no legislated involvement of the Environment Minister or Environment Department.

There are question marks about whether risk assessments will adequately account for drivers such as climate change and the addition of new genotypes of already-established species in Australia. The rejection of the precautionary principle, which is vital due to a widespread lack of information about environmental impacts and great complexity of ecological interactions, implies that uncertainty may be disregarded in some decisions and that obligations under the Biodiversity Convention, to which the precautionary principle is fundamental, may be under-rated. There are already some precautionary elements in decision-making, including in risk assessment if current protocols are maintained, but the principle should be applied comprehensively, including for responses to new incursions.

The value of the community in biosecurity policy setting and decision-making is also under-rated. The Bill fails to give effect to a 'biosecurity partnership' with community. This is likely to perpetuate existing disparities in investment and response capabilities for environmental biosecurity compared to agricultural biosecurity. As proposed in this submission, there is need for a body equivalent to the industry bodies, Plant Health Australia and Animal Health Australia, to focus on priorities for environmental biosecurity.

In sum, the considerable potential of the Biosecurity Bill 2012 to provide for stronger environmental biosecurity is limited by inadequate institutional arrangements and deficient decision-making and review processes.

ENVIRONMENTAL EFFECTIVENESS OF THE BIOSECURITY BILL

Does the Biosecurity Bill in combination with other biosecurity regimes provide the foundation for Australia to meet its obligations under the Biodiversity Convention? The only meaningful way to evaluate the environmental effectiveness of the Biosecurity Bill is to consider the extent to which it will address Australia's highest priority environmental biosecurity risks and threats.

[1] Those not subject to biosecurity import risk analyses.

Are measures under the Bill likely to reduce or prevent the following risks?

- **Accidental introductions of marine invaders via ballast water and sediment and biofouling**

YES – for organisms arriving in ballast water and ballast sediment. The national regulation of ballast water and sediment for international and domestic shipping is a major advance for environmental biosecurity. However, the standards are yet to be released.

NO – for organisms arriving in biofouling, for which there is almost no regulation in Australia. However, the government is in the process of developing an approach to biofouling, so there is potential for future national regulation to complement that for ballast water and sediment.

- **Permitted importation of new invasive species**

YES, probably – assuming that Australia's Appropriate Level of Protection (ALOP) is rigorously applied and risk assessment is precautionary and competent. However, the lack of transparency and lack of expert review associated with most risk assessments and import decisions (apart from those subject to import risk analysis[2]) means that mistakes, biases and avoidable information gaps won't be identified and corrected. The placement of biosecurity in DAFF, which is also responsible for promoting trade opportunities, creates potential for trade-biased decisions, as does an exclusive right for legal appeal against import decisions resting with the applicant. There is great disparity in assessment effort on goods subject to import risk analysis (consultation, publication of assessment) and those that are subject just to risk assessment (no consultation or publication), but there is no systematic risk-based approach to determining priorities for import risk analyses, so environmental priorities are likely to be neglected for BIRAs.

- **Permitted importation of new genotypes of already established, not 'officially controlled' species, creating the potential for exacerbated environmental harm**

NO, probably not – as there is nothing in the definition of biosecurity risk or in discussions with government to indicate that this risk pathway is accorded a high priority. However, relevant regulations are yet to be released. The conventional approach to this risk is to require evidence of taxon-specific additional impacts to justify import prohibition where already established taxa are not under 'official control'. To properly address this pathway requires a national containment (spread and threat) approach to provide the WTO-required 'official control' rationale (see next). It also warrants application of the precautionary principle due to the inevitable high uncertainties of predicting specific impacts of increasing the genetic amplitude of established species, including under climate change.

- **Continued importation and inter-regional trade and movement of invasive species (particularly plants)**

NO, probably not – despite the emphasis arising from the Beale review on managing risk across the biosecurity continuum. Post-border deficiencies in containment and control in most states and territories, particularly for weeds, compromise the capacity for comprehensive application of Australia's ALOP. Due to the WTO requirement for established species to be under 'official control' to justify import prohibition, post-border failures to regulate trade and movement of the majority of weeds and potential weeds means that the environmental weed burden will continue to grow (due both to increasing propagule pressure and greater genetic amplitude). There is no intention under the Intergovernmental Agreement on Biosecurity to close the gaps and address inconsistencies on post-border regulation. The federal government could and should use its powers (already available under the *Environment Protection and Biodiversity Conservation Act 1999*, s301A) to implement a containment approach applying risk-based restrictions on imports and inter-regional trade and movement.

[2] Biosecurity Import Risk Analysis involves a much more rigorous and thorough analysis of risk than the risk assessments that underpin most import decisions. They will be subject to public consultation.

❖ **Accidental introductions of terrestrial invasive species**

YES, but only to some extent – there are new legislative tools in the Bill but no requirement for systematic risk-based application. The Director of Biosecurity has discretion to use biosecurity control orders and various types of biosecurity zones to respond to incursions and to conduct monitoring but they are unlikely to be used systematically for environmental priorities unless there is a default requirement for federal responses to breaches of the national border and action is based on expert advice about environmental priorities. Because of a general lack of information about environmental impacts, environmental incursions are likely to be under-rated unless the precautionary principle is applied. Unless there is a body equivalent to the industry bodies Plant Health Australia and Animal Health Australia to undertake contingency planning and develop more effective ecologically based approaches to environmental incursions, Australia will continue to be under-prepared for environmental invaders.

❖ **Incursions to high conservation value, high risk areas such as many islands**

YES, but to a limited extent – for the reasons outlined above. Unless there is a systematic approach and a special category of conservation biosecurity zones that can be applied to islands and other high value areas with high biosecurity risks, the tools in the Biosecurity Bill are unlikely to be systematically applied for conservation. Except for ballast water provisions, the Bill also does not cover all external territories, many with high biosecurity risks.

STRENGTHS, WEAKNESSES AND REFORM PRIORITIES

Strengths

1. The Bill's objects include giving effect to Australia's obligations under the Convention for Biological Diversity, so provide the basis for a strong environmental focus.
2. The Bill sets a high standard for Australia's *Appropriate Level of Protection* (*ALOP*) "aimed at reducing biosecurity risks to a very low level".
3. The Bill provides for a wide scope and strong powers for the Federal Government, including for some post-border functions. The government has the legal capacity to respond quickly and flexibly to a wide range of biosecurity issues and events. However, there is too much discretion in the exercise of these powers. They should be applied systematically based on biosecurity risk and priorities, including environmental priorities.
4. The Bill provides for a national approach to regulating the discharge of ballast water and ballast sediment. It is not yet possible to assess standards because methods and locations for ballast discharge will be specified in regulations or by the Director of Biosecurity.
5. The Bill provides the potential for declaration of various types of biosecurity zones to deal with post-border biosecurity risks, intended primarily for ports and airports and to respond to biosecurity emergencies. Biosecurity zones could be declared for conservation purposes but there should be a systematic approach to this.
6. The Bill provides for an Inspector-General of Biosecurity to review the performance of functions and the exercise of powers by the Director of Biosecurity. However, there is no provision for review or audit of the merits of most biosecurity decisions.
7. The Bill provides for a wide array of enforcement tools, including civil remedies, infringement notices, enforceable undertakings and injunctions.

Weaknesses

In many respects it is difficult to tell how effective the Act will be because it is framework legislation and lacks detail that will either be in legislation or policy or to be determined by the Director of Biosecurity.

1. The Act will be administered by the Department of Agriculture, Fisheries and Forestry (DAFF) rather than by an independent statutory authority. Decision-making power is mostly concentrated in one position – the Director of Biosecurity, who is also the Secretary of the Department of Agriculture – rather than in an expert Biosecurity Commission and independent Director of Biosecurity (the structure recommended by the Beale review). Biosecurity decisions are too important to be left to a director with multiple other roles including potentially conflicting roles in trade promotion.
2. There is no guarantee that environmental issues will be accorded sufficient priority. There is no legislated role for the Environment Department or Minister for the Environment. There is no requirement for environmental representation in consultative or advisory committees. Decisions are at the discretion of the Biosecurity Director. The institutional arrangements are likely to perpetuate existing disparities in investment and preparedness for environmental and economic biosecurity risks.
3. Much decision-making lacks transparency and there are few opportunities for public participation in either policy setting or decision-making (except for Biosecurity Import Risk Analyses). There are few requirements for publication of information or reporting. There are no third party review rights. The lack of public participation under the Bill contrasts with the requirements for public participation and review rights for assessments conducted under the EPBC Act for imports of live animals.
4. The Bill does not require application of the precautionary principle, which is of fundamental importance for environmental decision-making because of the prevalent high level of uncertainty about invasive species impacts in the natural environment. The precautionary principle applies to equivalent decisions about imports of live specimens made under the EPBC Act.
5. Except for the regulation of ballast water disposal, the Bill does not provide for a comprehensive 'one biosecurity' approach. Application of post-border powers is at the discretion of the Director of Biosecurity rather than systematic. There is no intention to implement a national risk assessment protocol or list nationally significant invasive species for eradication, containment or control. Major gaps in post-border regulation, particularly of weeds, will not be addressed.
6. The Bill does not apply to Australia's external territories (many of which have very high conservation values and high vulnerability to invasive species) unless specifically prescribed in regulation.
7. The Bill does not provide for regulation of biofouling, the predominant source of marine invasive species.

Reform priorities

1. Implement the structure proposed by the Beale review of a statutory Biosecurity Authority, an expert Biosecurity Commission and an independent Director of Biosecurity. Specify that at least one-third of Biosecurity Commissioners must have primary expertise in disciplines relevant to environmental biosecurity, including ecology and conservation biology, and be appointed by the Environment Minister, as recommended by the Hawke review of the EPBC Act.
2. Require application of the precautionary principle in decision-making under the Biosecurity Act.
3. Implement a genuine partnership with community by providing rights for access to information, consultation, representation in policy processes and legal review at least equivalent to such rights under the EPBC Act. Require that all government committees with a focus on environmental issues include representation from the Environmental NGO sector.
4. Establish Environment Health Australia (an organisation equivalent to Plant Health Australia and Animal Health Australia) to facilitate a cross-jurisdictional, cross-sector collaboration to develop more ecologically informed approaches to biosecurity, improve biosecurity preparedness, promote effective responses to environmental incursions, enhance community awareness, vigilance and action, and monitor and report on progress in environmental biosecurity.
5. Provide for the Secretary of the Environment Department and the Environment Minister to have roles in decision-making and policy direction on important environmental biosecurity issues, including issuance of biosecurity guidelines and priorities for BIRAs, review and auditing of environmentally relevant risk assessments, BIRAs and import decisions, declarations of biosecurity zones for conservation purposes,

environmental conditions for designated first points of landing, declaration of environmental biosecurity emergencies, and advice on priorities for the Inspector-General of Biosecurity. (This backstop recommendation applies if the biosecurity agency is situated within DAFF rather than as an independent authority.)

6. Require all biosecurity participants to exercise a general biosecurity obligation to take all reasonable and practical measures to prevent and minimise biosecurity risks, with provisions similar to those in Queensland's Biosecurity Bill 2011.
7. Ensure that decisions to permit new imports are transparently based on risk assessments and the best available evidence by providing for public input and review. If the Beale-recommended model of an independent authority and expert commission is rejected, establish a Risk Assessment Authority to undertake risk assessments and BIRAs.
8. Define 'environment' to include biodiversity indigenous to Australia, including ecosystem, species and genetic diversity, and ecological processes.
9. Define 'biosecurity risk' to (a) recognise changes through time, so that risks are assessed over an ecologically relevant time frame taking account of climate change; (b) include the likelihood of new genotypes of a disease or pest combining with others to exacerbate the potential for the disease or pest to cause harm or to cause greater harm than existing genotypes; and (c) recognise regional differences and different levels of biodiversity (ranging from ecosystem to genetic diversity).
10. Implement a 'one biosecurity' approach by adopting a national risk assessment protocol for pre-border and post-border application and establish a listing process for nationally significant invasive species to provide for risk-based management across the biosecurity continuum.
11. Establish a category of biosecurity zone for high value conservation areas with high biosecurity risks known as 'conservation biosecurity zones', as the basis for implementing biosecurity measures, plans and monitoring. The zones should be declared by the Secretary of the Environment Department on advice by the Threatened Species Scientific Committee or other scientific committee, and biosecurity arrangements negotiated in bilateral agreements between governments and/or private property managers. Facilitate biosecurity protection of high value islands by the systematic declaration of conservation biosecurity zones.
12. Adopt a national regulatory approach to biofouling, covering international and domestic traffic, for all Australian waters, as is provided for ballast water management.

SUMMARY OF MAIN ISSUES AND RECOMMENDATIONS

Objects and goals, including the ALOP (see Section 2)

Environment NGOs endorse the inclusion of the Biodiversity Convention in the Act's Objects as recognition that effective biosecurity is vital for conserving Australia's biodiversity. It is important to detail in guidelines how the legislation will give effect to the Convention. We recommend the Objects are expanded to specify relevant environmental objectives, similar to those in the EPBC Act.

Rec 1. As proposed in the Biosecurity Bill, include giving effect to Australia's obligations under the Biodiversity Convention as an object. Explicate in guidelines how the Biosecurity Act and related legislation and policy will give effect to these obligations, including those in the 'Guiding Principles for the prevention, introduction and mitigation of impacts of alien species that threaten ecosystems, habitats or species'.

Rec 2. Incorporate relevant objects from the EPBC Act, including the conservation of biodiversity and ecologically sustainable development. Emphasise the importance of a partnership approach by including an object (similar to one in the EPBC Act): 'to promote a partnership approach to biosecurity involving the community, industries and governments'.

Environment NGOs endorse a conservative Appropriate Level of Protection (ALOP) aimed at "reducing biosecurity risks to a very low level" but recommend deletion of the caveat "not to zero". It is not needed for clarity, as it is obvious that it is impossible to most biosecurity risks to zero, and the attempt to do so would be justified for some biosecurity risks such as catastrophic disease.

Rec 3. Define Australia's ALOP as "a high level of sanitary and phytosanitary protection aimed at reducing biosecurity risks to a very low level", deleting the caveat "but not to zero".

Rec 4. Include a note in 'Appropriate level of protection' (^PM25), specifying that if there is insufficient evidence to determine biosecurity risk, or if the available evidence is inconclusive in that regard, then the precautionary principle will apply.

Rec 5. Aim to achieve the ALOP across the biosecurity continuum for functions under the Biosecurity Bill. Develop ALOP guidelines to explain what the ALOP entails for protecting Australia's environment, economy and human health across the biosecurity continuum.

The definition of 'environment' in the Bill (taken from the EPBC Act) is too broad as it can be taken to include invasive species. It does not distinguish between biota indigenous and non-indigenous biota and neglects ecological processes.

Rec 6. Change the definition of 'environment' in the Biosecurity Bill to the following:

Environment includes:

(a) Australian biodiversity – the variety of life indigenous to Australia and her external territories, encompassing ecosystem, species and genetic diversity,
(b) ecological processes – the interactions and connections between living and non-living systems, including movements of energy, nutrients and species, and
(c) natural and physical resources.

Governance (see Section 3)

Environment NGOs endorse the structure recommended by the Beale review: a statutory authority, an expert commission and an independent director. The model proposed under the Bill of an agency within DAFF headed by the Secretary of DAFF is flawed, and unlikely to deliver a consistently high level of biosecurity protection. Rather than being clearly independent of commercial and political considerations, most decision-making is invested in a director who is also the Secretary of DAFF and directed by the Minister for Agriculture in other respects of his/her role in government, which include potentially conflicting roles in trade promotion. The Beale review emphasised the importance of separating the functions of biosecurity and trade promotion. Most decision-making under the Bill is discretionary, opaque and non-reviewable.

Rec 7. Implement the Beale review recommendation for biosecurity to be administered by a statutory National Biosecurity Authority, with an independent Director of Biosecurity and an expert Biosecurity Commission.

Rec 8. Specify that at least one-third of Biosecurity Commissioners have primary expertise in disciplines relevant to environmental biosecurity, including ecology and conservation biology, and are appointed by the Environment Minister, as recommended by the Hawke review of the EPBC Act.

Given the complexities of biosecurity, the great diversity of stakeholders, the high environmental and other values at stake, and the contention surrounding many biosecurity decisions, it is vital to ensure that decision-making and policy processes adhere to high standards and principles, including those set by the WTO Sanitary and Phytosanitary Agreement, the Biodiversity Convention, Australia's National Strategy for Ecologically

Sustainable Development, the Rio Declaration (Principle 10 on public participation) and best practice principles for public participation.

Uncertainty is prevalent and high with respect to non-native species' potential impacts in the natural environment because of the complexity of biological interactions, the diversity of ecosystems, and the unpredictability of environmental changes over time, particularly under climate change, and the behaviour of species in new environments. The precautionary principle is standard in environmental legislation, including for biosecurity functions under the EPBC Act, and included in some biosecurity laws (eg. Norway). Although legal opinion may be divided on the precise boundaries between trade laws and the precautionary principle, Australia should still give priority to harmonising biosecurity integrity and environmental protection in a way that incorporates the precautionary principle without bringing such regulation into direct conflict with the rules of the WTO.

Rec 9. Require application of the precautionary principle in decision-making under the Biosecurity Act.

Both the Beale review and the Hawke review found that there has been insufficient focus on environmental biosecurity, and that the environment has been neglected in comparison with primary production. The Hawke review advised that "effective governance arrangements that embody environmental principles will be necessary to ensure that the culture of the new Authority maintains adequate consideration of the environment" and that the "new biosecurity legislation should require that the environment must be given equal consideration alongside human health and economic and social consideration". To achieve this, the Biosecurity Act should:

- include environmental objects and principles,
- ensure equivalence of environmental representation and expertise in all relevant consultation and advisory committees and on the recommended Biosecurity Commission,
- mandate a role for the Environment Minister in appointing environmental representatives, determining BIRA priorities and guidelines, and developing biosecurity strategies and policies,
- facilitate active community participation in biosecurity policy setting and decision-making, and
- establish Environment Health Australia.

There need to be close working links between environmental and biosecurity agencies across all jurisdictions. The proposed Biosecurity Commission should report to, and have input to the agendas of, both relevant COAG Standing Councils – Primary Industries and Environment and Water.

These institutional arrangements need to be complemented by greater investment in environmental biosecurity (including contingency planning, research, surveillance) to overcome current disparities with industry biosecurity.

Roles and responsibilities of biosecurity partners and participants (see Section 4)

The Beale review and the Federal Government have emphasised the importance of a partnership approach to biosecurity involving governments, industry and community. But the Biosecurity Bill offers few options for community participation in biosecurity policy setting or decision-making. This contrasts with opportunities provided under the EPBC Act, including for decisions about live animal imports under Part 13A. Environment NGOs are a distinct category of community stakeholder with a clear stake in biosecurity, including:

- as advocates for and contributors to more effective environmental policies and programs (the majority of environmental gains in Australia have resulted from advocacy by Environmental NGOs), and
- as active participants in biosecurity, particularly in eradication and control programs for biodiversity conservation, on public and private lands, and

- as educators and information providers to and from a much wider range of stakeholders than government agencies can hope to reach.

There has been only a limited role Environment NGOs in most biosecurity institutions, in contrast to the active role we play in other environmental policy areas and in contrast to the industry role in biosecurity. Of about 20 federal biosecurity consultative forums noted by the Beale review, just one has involved a representative from the environmental NGO sector.

Rec 10. Include a 'community partnerships' chapter in the Biosecurity Act that sets out the roles and rights of the community in biosecurity decision-making, including publication of information, consultation, representation and legal review at least equivalent to those under the EPBC Act..

Rec 11. Ensure that all government committees with a focus on environmental issues include representation from the Environment NGO sector. On high level committees such as the Biosecurity Advisory Council require that there be equivalent representation from the business and environmental sectors, in recognition of the importance of biosecurity to each sector.

The complexity and scale of environmental challenges warrants a comprehensive biosecurity focus facilitated by a new national body to engender a genuine partnership approach. It will not be sufficient to bolt on environmental responsibilities to existing structures and cultures.

Environment NGOs propose the establishment of a national body, Environment Health Australia, to bring together major participants in environmental biosecurity, effectively involve the community sector, and facilitate a cross-jurisdictional, cross-sector collaboration. It would be the environmental equivalent of, and collaborate with, Animal Health Australia and Plant Health Australia.

Rec 12. Establish Environment Health Australia as a partnership between community, governments and environmental businesses to focus on high priority policy and planning issues in environmental biosecurity.

The Environment Minister and the Environment Department should have defined roles under the Biosecurity Bill to ensure that environmental biosecurity receives high priority and is integrated with the environmental biosecurity functions under the EPBC Act, and obligations arising from Australia's Biodiversity Conservation Strategy 2010-2030.

Rec 13. If the Beale review recommendations for an independent biosecurity authority, director and commission are not implemented, provide for the Secretary of the Environment Department and the Environment Minister to have designated roles in decision-making and policy direction on important environmental biosecurity issues, including:

- issuance of biosecurity guidelines and priorities for BIRAs
- review and auditing of environmentally relevant risk assessments, BIRAs and import decisions
- declarations of biosecurity zones for conservation purposes
- environmental conditions for designated first points of landing
- declaration of environmental biosecurity emergencies
- advice on priorities for the Inspector-General of Biosecurity

To foster compliance and engender community confidence in approved arrangements, there is need for regular audits to verify that standards are being maintained and transparency, as proposed under the Bill.

Rec 14. Require regular audits of approved arrangements (as proposed under the Bill) and publication of the arrangements and the outcomes of audits, with confidentiality kept to the minimum necessitated by law.

No matter how comprehensive the Biosecurity Act and Regulations, and no matter how diligent the Director of Biosecurity, there will inevitably be a myriad of actions and omissions contributing to biosecurity risks that are not addressed. The Beale review emphasised the importance of biosecurity as a shared responsibility, which requires not only that biosecurity participants obey the law but that they generally take care to observe, report, and minimise biosecurity risks. Environment NGOs advocate that the shared responsibility focus be reflected in the Biosecurity Bill as a general biosecurity obligation for all biosecurity participants to take all reasonable and practical measures to prevent or minimise biosecurity risk. Queensland's Biosecurity Bill 2011 provides a good model.

Rec 15. Require all biosecurity participants to exercise a general biosecurity obligation to take all reasonable and practical measures to prevent and minimise biosecurity risks, with provisions similar to those in Queensland's Biosecurity Bill 2011.

Assessing import risks (see Section 5)

Ensuring that all import decisions are based on rigorous and precautionary risk assessments is integral to an effective biosecurity system. It is fundamental to biosecurity to prioritise prevention by prohibiting imports of new taxa (those not widely established or controlled) unless they are assessed as very low risk (according to Australia's ALOP).

Rec 16. Maintain the 'permitted list' approach of prohibiting entry to all plant and animal taxa other than those assessed as having a very low biosecurity risk (Australia's ALOP) or those that have established in Australia and are not under 'official control' in any region.

Rec 17. Ensure that all import decisions are based on independent, transparent and scientifically credible risk assessments. If the Beale-recommended model of an independent authority and expert commission is rejected, establish a Risk Assessment Authority to undertake risk assessments and BIRAs.

Few import risk analyses have been conducted for environmental reasons. To ensure that risk analysis is directed to the highest priorities, including environmental, economic and health priorities, there should be a transparent prioritisation process based on degree of risk. This could be a function for the expert Biosecurity Commission (or Risk Assessment Authority) or for Plant Health Australia, Animal Health Australia and the proposed Environment Health Australia.

Rec 18. Require that BIRA priorities are determined by systematic identification and prioritisation of risk pathways and products, with equivalent weight accorded to environmental, economic and health priorities.

Risk assessments of all types should take into account likely environmental changes in the future and general drivers of risk. Climate change is expected to exacerbate the threat of invasive species to the Australian environment. Risk assessments should take account of predicted climate changes over an ecologically relevant timeframe.

Risk assessments should also account for generalised drivers of invasion for which there is insufficient taxon-specific information to determine specific outcomes. For example, there is accumulating evidence that increasing the genetic diversity of species exacerbates the likelihood of invasiveness and potential impacts –- for example, by boosting species' tolerances, range or competitiveness – but the particular impacts of new genotypes is difficult to predict. The Hawke review of the EPBC Act advised that "a more systematic approach

is needed for assessing proposed new imports to respond to the potential invasive risks of new variants of currently listed species."

Risk assessments also need to account for the immense diversity of Australian ecosystems and all levels of biodiversity (including ecosystems, ecological communities, species, populations), which underpin great diversity in biosecurity risk across Australia. It is important that risk assessment protocols appropriately weight risks to small areas or to components of biodiversity. The Beale review highlighted concerns that regional differences have been neglected or inconsistently recognised in risk assessments.

Rec 19. Define 'biosecurity risk' to (a) recognise changes through time, to require that risks are assessed over an ecologically relevant time frame taking account of climate change; (b) include the likelihood of new genotypes of a disease or pest combining with others to exacerbate the potential for the disease or pest to cause harm or to cause greater harm than existing genotypes; and (c) recognise regional differences and different levels of biodiversity (ranging from ecosystem to genetic level).

The capacity of the Federal Government to regulate effectively in the pre-border domain is compromised by deficiencies in post-border regulation. As the Hawke review of the EPBC Act found, the thousands of exotic plant species within Australia represent a "vast reservoir of potential future problems" and trade and movement of most are either unconstrained or inconsistently regulated by states and territories. The Intergovernmental Agreement on Biosecurity does not address this gap, requiring only that if States and Territories apply biosecurity measures, they will be the "least trade restrictive" necessary to achieve Australia's ALOP, not that they will apply measures necessary to achieve Australia's ALOP.

Environment NGOs advocate the adoption of a national risk assessment protocol for pre-border and post-border application and national listings of species as the basis for a genuine 'one biosecurity' approach that systematically applies Australia's ALOP across the biosecurity continuum. As provided for in section 301A of the EPBC Act, the Commonwealth (by virtue of the Biodiversity Convention and the quarantine power) can regulate trade and actions involving listed non-native species that threaten or are likely to threaten biodiversity.

Of high priority is development of a national containment strategy, to contain the *spread* of harmful species by regulating trade and other actions, and to contain their *threat* by prohibiting the release of new genetic variants and regulating other actions that exacerbate impacts.

Rec 20. Implement a 'one biosecurity' approach by adopting a national risk assessment protocol for pre-border and post-border application and establish a listing process for nationally significant invasive species to provide for risk-based management across the biosecurity continuum, such as provided for under the EPBC Act, s301A.

Rec 21. Provide the regulatory basis for a national containment approach by regulating international and domestic trade to contain the spread and threat of invasive species threatening biodiversity.

Rec 22. Provide for the development of a national list of exotic species for controlled private keeping in Australia, as recommended by the Hawke review.

Post-border risks – control orders and biosecurity zones (see Section 6)

Environment NGOs welcome many elements of chapter 6, which provides for broad Commonwealth powers to issue biosecurity control orders and establish biosecurity response, monitoring and activity zones. We advocate that these powers be used systematically for environmental protection on the basis of expert advice and prioritisation.

We advocate that there should be flexibility to extend biosecurity control orders beyond 3 months to at least 1 year, and that the Environment Department Secretary should have equivalent powers to make biosecurity control orders where there is a biosecurity risk to a Matter of National Environmental Significance under the EPBC Act. Biosecurity control orders should be used systematically to respond to breaches of the national border that result in the post-border presence of potential pest or disease organisms with a risk exceeding that defined by the ALOP. Action in response to national quarantine breaches should be required rather than discretionary.

Rec 23. Provide for the issuance of biosecurity control orders to implement biosecurity measures, manage risks and monitor diseases or pests necessary to achieve Australia's ALOP, with a potential timeframe of at least 1 year. Provide the Environment Department Secretary with powers to make biosecurity control orders where there is a biosecurity risk to a Matter of National Environmental Significance under the EPBC Act.

Rec 24. Require that biosecurity control orders are used systematically to respond to breaches of the national border that could result in the establishment of potential pest or disease organisms. Require a response by the biosecurity agency within 48 hours to a reported breach, aimed at containing, destroying or seizing a potential pest or disease unless or until assessed by an expert body as not feasible or not justified on the basis of a risk assessment.

Environment NGOs propose a special category of biosecurity zone for areas with high conservation values and special biosecurity needs – 'conservation biosecurity zones' – to implement biosecurity measures and plans, and conduct monitoring. The proposal is consistent with the Federal Government's obligations to protect Matters of National Environmental Significance listed under the EPBC Act. There would need to be a mechanism for negotiation of agreements with States and Territories or private property owners about biosecurity arrangements.

Rec 25. Establish a category of biosecurity zone for high value conservation areas with high biosecurity risks known as 'conservation biosecurity zones', as the basis for implementing biosecurity measures, plans and monitoring. The zones should be declared by the Secretary of the Environment Department on advice by the Threatened Species Scientific Committee or other scientific committee, and biosecurity arrangements negotiated in bilateral agreements between governments and/or private property managers.

Protecting Australia's external territories and islands (Section 7)

Australia's external territories and islands warrant a special focus under the Biosecurity Act because many have exceptionally high biodiversity values and are subject to high biosecurity risks.

This requires extending the Act to all external territories, with the exception of Australian Antarctic Territory, which is covered by a treaty; creating conservation biosecurity zones; ensuring that landing points are regulated for environmental protection; and regulating shipping traffic to limit the risks of marine introductions via ballast water disposal and biofouling.

Rec 26. Apply the Biosecurity Act to all external territories, except for Australian Antarctic Territory.

Rec 27. Apply federal ballast and biofouling regulations to all external territories and islands.

Rec 28. For external territories, empower the Secretary of the Environment Department to specify the location of and conditions for first landing points.

Rec 29. Facilitate biosecurity protection of high value islands by the systematic declaration of conservation biosecurity zones as the basis for implementing quarantine measures and biosecurity plans to protect island biodiversity. The zones should be declared by the Secretary of the Environment Department on advice by a scientific committee (eg. the Threatened

Species Scientific Committee) and biosecurity arrangements negotiated with state and territory governments.

Marine biosecurity (Section 8)

Compared to terrestrial invasive species, marine invaders have been neglected. Australian waters already have an estimated 250 introduced species, another 230 cryptogenic species. Marine invasion risks in Australia are rising as shipping volumes escalate.

Environment NGOs strongly endorse the proposal for national regulation of ballast water discharge, as one of the most positive reforms of the Biosecurity Bill. We recommend that standards be clearly defined in regulations.

Current federal, state and territory approaches to biofouling are deficient (mostly non-existent) and inconsistent. The lack of regulation of biofouling is a major gap in biosecurity and environmental law. We understand that the Government is currently considering whether to proceed with a regulatory or voluntary regime subsequent to consultation on a Regulatory Impact Statement. Environment NGOs strongly recommend a national regulatory regime with a scope similar to that for ballast water, covering international and domestic vessels and marine infrastructure for all Australian waters, including external territories.

Rec 30. Adopt a national regulatory approach to ballast water, covering international and domestic traffic, for all Australian waters, as proposed in the Biosecurity Bill, with standards specified in regulations.

Rec 31. Adopt a national regulatory approach to biofouling, covering international and domestic traffic, for all Australian waters.

Biosecurity strategy and action plans (see Section 9)

An essential complement to biosecurity laws is a biosecurity strategy (or strategies) and action plans that identify the priorities, targets and actions necessary to achieve national environmental, health and economic goals. Currently, Australia has an 'Australian Weeds Strategy', and an 'Australian Pest Animal Strategy'. Invasive species is also an important component of the 'Australian Biodiversity Strategy 2010-2030'. The proposed biosecurity strategy would build on existing strategies and address gaps such as invertebrates, parasites and pathogens, and meaningfully involve community and environmental sectors in development and implementation.

Rec 32. Include a requirement in the Biosecurity Act for the development of a Biosecurity Strategy and Action Plans, to be developed in a partnership between government, industry and community, jointly led by the Environment and Agricultural departments, setting out how Australia will meet relevant obligations under the Biodiversity Convention and targets in the Biodiversity Conservation Strategy, among others. Require annual progress reports and 5 yearly reviews.

Reporting and auditing (see Section 10)

Biosecurity in Australia is opaque, with limited flow of information about most aspects of biosecurity performance. There are no provisions in the Biosecurity Bill to improve information flow and transparency. Information collection and publication is vital for the following essential biosecurity functions:

- establishing a baseline against which to assess progress to biosecurity goals and targets,
- evaluating progress towards achieving biosecurity targets and goals,
- auditing performance of biosecurity functions, including risk assessments, surveillance, inspections, interceptions, eradications, containment, and control,

- identifying emerging biosecurity risks to enable the development of preventative policy, and
- sharing information about risks with biosecurity participants, including internationally.

Independent auditing of and reporting on biosecurity performance is essential. Environment NGOs support the Beale review recommendations for the establishment of an auditing unit (as has been implemented) and for a statutory office of Inspector General of Biosecurity (provided for under the Inspector-General of Biosecurity Bill 2012) with comprehensive audit powers, with audit priorities determined by the Biosecurity Commission. There are limitations in the proposed auditing powers of the Inspector-General of Biosecurity, with no power to review the merits of decisions. These restricted audit powers would be acceptable if decision-making was clearly independent, expert-based and transparent, but with much decision-making power discretionary and not subject to review, there is need for a comprehensive audit function.

Rec 33. Mandate the following reporting requirements:
- Biosecurity outlook reports (every two years)
- State of biosecurity reports (annual), including on progress to achieve targets in the Biosecurity Strategy.

Rec 34. Adopt the Beale review's recommendation for a statutory office of Inspector-General of Biosecurity as proposed by the *Inspector-General of Biosecurity Bill 2012*.

Rec 35. Establish an expert environmental audit unit to review biosecurity systems and decisions relevant to the environment. This unit should report to the Environment Minister and all reports should be published.

Enforcement (see Section 11)

Environment NGOs endorse the provisions providing for a wide array of enforcement tools, including civil remedies, infringement notices, enforceable undertakings and injunctions. Missing from the array of tools are those involving third parties. Individuals and groups have legal rights of review for import decisions made under the EPBC Act, but not for similar decisions under the Biosecurity Bill, and can seek injunctions to restrain unlawful activities under the EPBC Act but not under the Biosecurity Bill.

The Biosecurity Bill has offences for receiving or possessing prohibited or conditionally non-prohibited goods brought or imported into Australia but anyone further along the chain of receiving illegally imported plants or animals or their progeny does not commit an offence under the Biosecurity Act. This leaves a substantial deterrence gap.

Rec 36. Provide third party rights for review of decisions and to seek injunctions to restrain unlawful activity equivalent to those available under the EPBC Act for decisions and activities relating to imports of live specimens.

Rec 37. Create an offence of accepting goods knowing, suspecting, or in willful disregard of whether the goods were illegally imported or derived from illegally imported goods

Exporting biosecurity risks (see Section 12)

Exports of live organisms can constitute a biosecurity risk for Australia or the receiving country. For Australia, our exporting of native species such as eucalypts and acacias to other countries can facilitate the adaptation of exotic pathogens, which exacerbates their disease risk for Australia.

Under customary international law and the Biodiversity Convention, Australia has a duty to prevent, reduce and control environmental harm to other countries and a duty to cooperate to mitigate transboundary environmental risks. Environment NGOs advocate that the Biosecurity Act promote responsible international citizenship by Australia in various ways, including assessing the risk to other countries of the release of

biological control agents in Australia and advising other countries of risks due to conveyances leaving Australian waters.

Rec 38. Expand the scope of the Biosecurity Act to require assessment of the biosecurity risks of exporting particular live specimens, including risks for Australia (due to the potential adaptation of exotic pathogens to Australian species grown overseas) and for recipient countries.

Rec 39. Require the Biosecurity Director to notify other countries of potential biosecurity risks originating within Australia or in transit through Australian territory, and to prevent or minimise those risks to other countries when feasible.

Rec 40. Require that biosecurity risks to neighbouring countries be included in the assessment of biological control agents.

1. ENVIRONMENTAL BIOSECURITY – STATUS AND PRIORITIES

As the replacement for the century-old *Quarantine Act 1908*, the *Biosecurity Bill 2012* represents a rare opportunity to usher in substantial reform to address some of Australia's most pressing environmental problems.

In section 1, we briefly summarise the impacts of invasive species, the differences between environmental and agricultural biosecurity that warrant a more ecologically focused biosecurity regime and the potential role of federal biosecurity laws. It is essential context to explain why Australia needs much more effective biosecurity systems than we currently have and than are provided for under the Biosecurity Bill.

1.1 INVASIVE SPECIES IMPACTS ON THE NATURAL ENVIRONMENT

> "The impacts of invasive species are now considered to pose a threat to Australian biodiversity of the same order as habitat loss and climate change."
>
> Federal Environment Department (2008)[3]

There is considerable government rhetoric about Australia's "enviable biosecurity system" and our relative freedom from major pests and diseases. While Australian biosecurity does have many world-leading features and our agricultural industries enjoy trade advantages due to freedom from many of the world's most damaging pests and diseases, there is nothing enviable about our record on environmental biosecurity.[4] Australia is a world leader in the extent of invasive species threats to the environment.

Australia has suffered dozens of extinctions due largely to invasive species, including the most recent just three years ago – the Christmas Island pipistrelle. We lead the world in mammal extinctions due to invasive predators, and many more mammals are on the brink, including in northern Australia previously thought to be secure because of low levels of habitat loss.[5] More than 70% of 1700 species listed as nationally threatened and more than 80% of listed ecological communities are imperilled by introduced animals, plants or diseases (Box 1). Invasive species such as fire-promoting weeds and hard-hoofed herbivores cause extensive damage, and have altered the ecological character of many landscapes – for example, weeds account for 52 (43%) of the 120 most widely distributed plant species in New South Wales.[6]

[3] Department of the Environment, Water, Heritage and the Arts. 2008. Submission to the Quarantine and Biosecurity Review. Australian Government.

[4] As one rough indicator, Australia has more than half the species in a List of 100 of the World's Worst Invasive Alien Species, not including the several which are Australian natives (see Global Invasive Species Database at http://www.issg.org/database/species/search.asp?st=100ss&fr=1&str=&lang=EN)

[5] Fitzsimons J, Legge S, Traill B, Woinarski J. 2010. Into Oblivion? The Disappearing Native Mammals of Northern Australia. The Nature Conservancy: Melbourne.

[6] Stohlgren T, Pysek P, Kartesz J, et al. 2011. Widespread plant species: natives versus aliens in our changing world. Biological Invasions 13:1931–1944. Of 13 regions, NSW was second highest after North America, where aliens accounted for 51.3% of the 120 most widely distributed plant species.

BOX 1. INVASIVE SPECIES STATISTICS

Numbers of exotic species

Exotic species	Plants	Vertebrates (not fish)	Fish	Invertebrates (not marine)	Marine organisms	Micro-organisms & fungi
Introduced	~30,000	~650	~1200	Unknown	Unknown	Unknown
Naturalised	>3,000	~60	34	Unknown	250-500	Unknown

Invasive species threats to biodiversity

- Weeds and pests threaten 61% of nationally listed threatened species [7]
- Diseases (mostly exotic) threaten 15% of nationally listed threatened species[8]
- Invasive species threaten >80% of nationally listed ecological communities
- 95 bird taxa are threatened by invasive predators[9]

Extinctions due substantially to invasive species

- 25 mammals (19 species, 6 subspecies), including Christmas Island pipistrelle, mostly due to cats, foxes, rabbits
- 13 island birds (3 species, 10 subspecies) due mainly to rats, cats and pigs
- 4 frogs due to chytrid fungus
- 4 plants due to weeds

How Australia compares globally on invasive species

Australia ranks globally as one of the worst affected countries – in terms of numbers of invasive species and for the ecological damage sustained. (Global data is scarce, so comparisons are difficult.)

- Highest number of mammal extinctions due to invasive species
- Highest number of invasive trees and shrubs (29% of global total)[10]
- Highest or second highest number of naturalised plant species[11]
- One of the highest densities of exotic plant species[12] and extent of widespread weeds[13]

Australia's most recent State of the Environment report (2011) gave the worst possible ratings for invasive species impacts on biodiversity: "very high" and "deteriorating" and found that management outcomes and outputs are "ineffective". One of many critical comments was that:

[7] Evans M, Watson J, Fuller R, Venter O, Bennett S, Marsack P, Possingham H. 2011. The spatial distribution of threats to species in Australia. BioScience 61: 281-289.

[8] Ibid.

[9] Garnett S, Crowley G. 2000. The Action Plan for Australian Birds. Environment Australia. Canberra.

[10] Richardson D, Rejmánek M. 2011. Trees and shrubs as invasive alien species – a global review. Diversity and Distributions 17: 788-809.

[11] Vitousek P, D'Antonio C, Loope L, Rejmanek M, Westbrooks R. 1997.'Introduced Species: A significant component of human-caused global change'. New Zealand Journal of Ecology (21) 1-16.

Simberloff D, Souza L, Nunez M, Barrios N, Bunn W. 2012. The natives are restless, but not often and mostly when disturbed. Ecology 93:598-607. According to the latter, the US has < 3000 naturalised plant species, fewer than Australia.

[12] Vitousek P, D'Antonio C, Loope L, Rejmanek M, Westbrooks R. 1997.'Introduced Species: A significant component of human-caused global change'. New Zealand Journal of Ecology (21) 1-16. Third to New Zealand and Coterminus US, but more recent information suggests Australia has a higher density than the US.

[13] Stohlgren T, Pysek P, Kartesz J, et al. 2011. Widespread plant species: natives versus aliens in our changing world. Biological Invasions 13:1931–1944.

> Government responses to invasive species are uncoordinated at the national level, reactive, focused on larger animals, biased towards potential impact on primary industry at the expense of the total ecosystem, and critically under-resourced.

The deteriorating trend is due to both new invaders (such as myrtle rust and Asian honeybees) and the spread of already established species. The greatest pressure derives from the latter category because of the immense diversity of introduced species already in Australia yet to achieve the full extent of their potential spread and density:

> Australia is in the throes of ecological upheaval, and most of this change is coming … from old pests tightening their grip on the land. It is important to understand that most pests in Australia have yet to occupy their full range: they are still migrating outwards or increasing in density (infilling) or both.[14]

Trends are also deteriorating because of the increasing vulnerability of native species and ecosystems due to multiple other threats – climate change, habitat loss and fire.

To stabilise and reduce environmental impacts of invasive species will require addressing multiple weaknesses in Australia's biosecurity system, including gaps in law and policy, and inadequate surveillance, eradication and control programs.

1.2 ACCOUNTING FOR ENVIRONMENTAL DIFFERENCES IN BIOSECURITY

Environment NGOs support the 'one biosecurity' approach recommended by the 2008 Beale review that envisions a seamless cross-sectoral, cross-jurisdictional approach to biosecurity. This integration is essential in a federal system, with biosecurity functions spread across three levels of government under numerous laws and policies, and with invasive threats having a multitude of pathways and drivers. 'One biosecurity' requires, however, recognition of the distinctive requirements of environmental biosecurity.

Many invasive species have both economic and environmental impacts, and sometimes social impacts as well, warranting a joint approach. But protecting the natural environment differs in many ways from protecting industry assets and requires a distinctive ecologically based approach to biosecurity. Environmental biosecurity cannot just be a bolt-on to existing industry approaches. Following is a brief outline of some of the differences that underpin distinctive requirements.

The values at stake – biodiversity and environmental health: Conservation requires a biosecurity focus on hundreds of thousands of species, from microbes to macropods, and their interactions that constitute ecosystems and ecosystem processes in terrestrial, freshwater and marine systems. In contrast, industry biosecurity is mostly focused on protecting individual economically valuable species that number no more than a few dozen (except for the nursery and aquarium industries, which use a wider range of species). The values at stake for industry are quantifiable in economic terms and are often replaceable – by new breeds, species or enterprises. The values at stake in conservation are not replaceable – each species and ecosystem is important – and cannot be quantified in economic terms. This means they are often undervalued when biosecurity priorities are decided.

Scale and complexity of threats: Because of the diversity of ecosystems, invasive species threatening the environment far outnumber those threatening agricultural assets and the impacts are more complex. For example, myrtle rust damage to industry will derive from the infection of particular commercially valuable species, but environmental impacts will consist of the impacts on hundreds of susceptible species and the

[14] Low T. 1999. Feral Future: The Untold Story of Australia's Exotic Invaders. Penguin.

flow-on effects on dependent wildlife. As DAFF has acknowledged is likely for weeds, the impacts of invasive species on the natural environment are even greater than their impacts on agricultural industries:

> "The cost of weeds to agricultural industries is estimated at about $4 billion a year. The cost of weeds to the environment is difficult to calculate but could be greater than the estimated cost to agricultural industries."[15]

State of knowledge: Much less is known about biodiversity than about cultivated species at biosecurity risk. The lack of knowledge about native biota, particularly invertebrates and microbes, means that most invasive species impacts are not documented or monitored. Of fungi, "far less than about 10 per cent of species are scientifically documented" and it may be many years before the effects of the many new fungi arriving each year are felt in Australian ecosystems. "As a consequence, lists of potentially damaging invaders rarely make reference to fungi."[16] DAFF says: "The potential susceptibility of Australian native flora to exotic pests and diseases is largely untested although some serious exotic pests and diseases have been shown experimentally to be suited to native plants as hosts."[17] The impacts of even high-profile invasive species are often poorly known – development of the NSW threat abatement plan for biotou bush increased the number of known species at risk from six to 158.[18]

Predictability and timeframes: While impacts on cultivated species can usually be predicted with reasonable confidence, there are high levels of uncertainty about impacts in the natural environment due to complex interactions, long timeframes (centuries) and lack of knowledge. Many impacts are facilitated by or synergistic with other threats, such as fragmentation and climate change. Invasive impacts in the natural environment may not be observed for decades due to lag effects, lack of monitoring or their insidious nature. A cow or crop killed by a new pathogen is much more easily detected than a dead bird in a forest.

Management approaches and options: There are many more management options in relatively simple, delimited agricultural systems than there are in complex natural environments. For example, in response to myrtle rust, plant industries can use fungicides, breed resistant varieties or use tolerant species, none of which are options in the natural environment. In many natural situations, weeds cannot be controlled with broadacre mechanical or chemical methods.

Stakeholders and resources: There are commercial incentives for industry to manage invasive species but environmental biosecurity relies on government and community investment for the public good. Commercial incentives and greater government spending also mean that industry biosecurity is better resourced than environmental biosecurity. A multitude of stakeholders, often with conflicting agendas, make environmental biosecurity a more socially and politically challenging policy area than industry biosecurity. Some of the most damaging environmental invaders have been ignored because of economic or social reasons that are rarely subject to cost-benefit analysis – many aquarium fish, pasture grasses and garden plants for example.

Some implications of these differences for environmental biosecurity laws, policies and programs

- Policy for environmental biosecurity needs to be shaped by ecological principles and address biodiversity priorities, rather than be an add-on to agricultural biosecurity.

---

[15] Department of Agriculture, Fisheries and Forestry: http://www.daff.gov.au/natural-resources/invasive/weeds

[16] Burgman M, Walshe T, Godden L, Martin P. 2009. Designing regulation for conservation and biosecurity. Australasian Journal of Natural Resources Law and Policy 13: 93-112.

[17] Australian Government. 2008. Australia – Measures affecting the importation of apples from New Zealand (DS367) First Written Submission of Australia. Geneva, 18 July 2008.

[18] Coutts-Smith A, Downey P. 2006. The Impact of Weeds on Threatened Biodiversity in NSW, Technical series no.11, CRC for Australian Weed Management Systems, Adelaide

- Because of ecological uncertainties and limited management options, the precautionary principle is vital.
- Biosecurity policy units and advisory bodies need more ecologists and conservationists.
- Biosecurity should be a high and joint priority for environmental and agricultural agencies.
- There needs to be more research into potential environmental invaders, the impacts of invasive species on biodiversity and environmental management.
- There is need for more funding for public good biosecurity priorities.
- There is need for an environmentally meaningful way of quantifying environmental threats and comparing threats and priorities across sectors.
- Post-border biosecurity needs to more preventive and ecologically defensive.
- Environmental biosecurity needs meaningful involvement of community and environment NGOs in policy development.

1.3 THE ROLE OF FEDERAL BIOSECURITY LAWS

Riley (2012) describes Australia's biosecurity regime as comprising "a tangle of laws, regulations and policies that traverse a range of environmental and natural resource systems", which is "the product of two centuries of predominantly ad hoc responses to the problem of unwanted species."[19] The 'one biosecurity' concept arising out of the Beale review was intended to encompass the reforms essential to unravel this law and policy tangle to align jurisdictional responsibilities within a cohesive national system. The creation of a completely new Act provides the opportunity to remove the 'ad hocery' resulting from a century of amendments to the Quarantine Act 1908 and to design a system that addresses major biosecurity priorities.

While not all biosecurity priorities can be directly addressed by national laws, the Biosecurity Act can provide the framework and impetus for other essential reforms. As Dovers (2008) argues, "Statute law is the wiring of the institutional system" and it can play a "crucial role in establishing policy processes, fashioning institutions, defining public participation and setting agency objectives."[20]

Environment NGOs strongly endorse the message of the Beale review that biosecurity risks should be seamlessly managed along the continuum from preborder to postborder via partnerships between different levels of government, industry and community. The traditional allocation of pre-border and border functions to the Federal Government and post-border functions to State/Territory Governments does not result in efficient or effective biosecurity, and the Australian Government has recognised the need for a comprehensive focus:

> The changing global environment means there is a need for a greater emphasis on managing the whole biosecurity continuum – onshore, at the border and offshore – rather than focusing primarily on interventions at the border.[21]

The inclusion of the Biodiversity Convention in the Objects of the Biosecurity Bill (Box 2) provide the powers for the biosecurity system to more effectively address priority environmental risks. In other words, there is the potential in this convergence of processes and opportunities to craft biosecurity laws that:

- create a genuinely national biosecurity system with consistent standards applied from pre-border to post-border,

[19] Riley S. 2012. Heads I win, tails you lose: Uncertainty and the protection of biodiversity from invasive alien species. Asia Pacific Journal of Environmental Law 14 (1-2): 139-168.

[20] Dovers S. 2008. Policy and institutional reforms. In D. Lindenmayer (ed.) Ten Commitments: Reshaping the Lucky Country's Environment. CSIRO Publishing.

[21] http://www.daff.gov.au/bsg/system

- create the framework for effective policy processes and institutions, and
- places a high priority on protecting the natural environment from invasive species.

2. OBJECTS AND GOALS, INCLUDING THE ALOP

2.1 OBJECTS

BOX 2. OBJECTS OF BIOSECURITY BILL 2012

(a) to provide for managing the following:
  (i) biosecurity risks;
  (ii) the risk of contagion of a listed human disease;
  (iii) the risk of listed human diseases entering Australian territory or a part of Australian territory, or emerging, establishing themselves or spreading in Australian territory or a part of Australian territory;
  (iv) risks related to ballast water;
(b) to give effect to Australia's international rights and obligations, including under the International Health Regulations, the SPS Agreement and the Biodiversity Convention.

Environment NGOs strongly endorse the inclusion of the Biodiversity Convention (CBD) in the Act's Objects as recognition that effective biosecurity is vital for conserving Australia's biodiversity. It is important to detail in what respects the legislation is intended to give effect to the CBD Article 8(h), target 9 of the Aichi Biodiversity Targets and Target 7 of Australia's Biodiversity Conservation Strategy (Box 3) and to incorporate in the Act relevant environmental principles, such as the precautionary principle, and approaches endorsed by Australian governments to assist in giving effect to the obligations (discussed in Section 3.2). Environment NGOs recommend the development of guidelines that demonstrate how the Biosecurity Act and related legislation and policy will fulfil our obligations under the Biodiversity Convention. These guidelines should incorporate the relevant CBD Guiding Principles for the prevention, introduction and mitigation of impacts of alien species that threaten ecosystems, habitats or species.[22]

BOX 3. CONVENTION ON BIOLOGICAL DIVERSITY- OBLIGATIONS AND TARGETS

Article 8(h), Biodiversity Convention
Each Contracting Party shall, as far as possible and as appropriate: ...
  (h) Prevent the introduction of, control or eradicate those alien species which threaten ecosystems, habitats or species; ...

Guidance for implementing Article 8(h) is provided by 15 'CBD Guiding Principles for the Prevention, Introduction and Mitigation of Impacts of Alien Species that Threaten Ecosystems Habitats or Species'[23]

Target 9, Aichi Biodiversity Targets
By 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment.

Target 7, Australia's Biodiversity Conservation Strategy 2010-2030

[22] Guiding Principles for the Prevention, Introduction and Mitigation of Impacts of Alien Species that Threaten Ecosystems, Habitats or Species. Adopted April 2002 as part of Decision VI/23 of the Conference of the Parties. Report of the Sixth Meeting of the Conference of the Parties to the Convention on Biological Diversity, UNEP/CBD/COP/6/20 (23 September 2002), See http://www.cbd.int/decision/cop/?id=7197

[23] Ibid.

By 2015, reduce by at least 10% the impacts of invasive species on threatened species and ecological communities in terrestrial, aquatic and marine environments.

Object (a) of the Biosecurity Bill is weak as it does not specify any particular standard or goals of managing biosecurity risks. Environment NGOs recommend that the Act include environmentally relevant objects deriving from the Biodiversity Convention, including modifications of biosecurity-relevant objects of the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act): in particular, conservation of biodiversity and ecologically sustainable development (Box 4). This will assist in clearly identifying the Biosecurity Act as vital environmental law, and in forging links between the Biosecurity Act and the EPBC Act.

Environment NGOs recommend that the Objects also include reference to the essential role of the community and industry in biosecurity policy and practice. The Beale review of biosecurity emphasised the importance of a partnership approach in recognition that effective biosecurity requires a high level of responsibility by industry and community. In section 3.2.4, Environment NGOs recommend amendments to give effect to the recommended 'partnership approach'. Its importance should be recognised by an Object such as Object (d) in the EPBC Act, along the lines of 'to promote a partnership approach to biosecurity involving the community, industries and governments'.

BOX 4. RELEVANT OBJECTS OF THE EPBC ACT 1999

(b) to promote ecologically sustainable development through the conservation and ecologically sustainable use of natural resources; and
(c) to promote the conservation of biodiversity; and
(d) to promote a co-operative approach to the protection and management of the environment involving governments, the community, land-holders and indigenous peoples

RECOMMENDATIONS

- As proposed in the Biosecurity Bill, include giving effect to Australia's obligations under the Biodiversity Convention as an Object. Explicate in guidelines how the Biosecurity Act and related legislation and policy will give effect to these obligations, including those in the Guiding Principles for the prevention, introduction and mitigation of impacts of alien species that threaten ecosystems, habitats or species.
- Incorporate relevant Objects from the EPBC Act, including the conservation of biodiversity and ecologically sustainable development. Emphasise the importance of a partnership approach by including an Object (similar to one in the EPBC Act): 'to promote a partnership approach to biosecurity involving the community, industries and governments'.

2.2 APPROPRIATE LEVEL OF PROTECTION (ALOP)

One of the main goals of the Biosecurity Act, although not specified as an Object, is to achieve Australia's defined ALOP (Box 5).

BOX 5. AUSTRALIA'S ALOP AND DEFINITION OF BIOSECURITY RISK

Appropriate level of protection (ALOP) for Australia against biosecurity risks
The *Appropriate Level of Protection* (or *ALOP*) for Australia is a high level of sanitary and phytosanitary protection aimed at reducing biosecurity risks to a very low level, but not to zero.

Note 1: This section is in accordance with Australia's rights and obligations under the SPS Agreement.
Note 2: The Director of Biosecurity must apply the ALOP for Australia in conducting a BIRA or risk

assessment in relation to the importation, or proposed importation, of particular goods into Australian territory (see subsection ^GA55(5) and section ^MG170).

Biosecurity risk
(a) the likelihood of a disease or pest:
(i) entering Australian territory or a part of Australian territory; or
(ii) establishing itself or spreading in Australian territory or a part of Australian territory; and
(b) the potential for any of the following:
(i) the disease or pest causing harm to human, animal or plant health;
(ii) the disease or pest causing harm to the environment;
(iii) economic consequences associated with the entry, establishment or spread of the disease or pest

Environment NGOs strongly endorse a conservative ALOP aimed at "reducing biosecurity risks to a very low level" but we recommend deletion of the caveat "not to zero". The caveat is not needed for clarity, as it is obvious that it is impossible to reduce most biosecurity risks to zero. There is no advantage to having the caveat and "very low" is sufficiently ambiguous to encompass a range of risk levels depending on priority. This is permissible under the SPS Agreement (Article 5.5), which requires only that members avoid arbitrary or unjustifiable distinctions in the levels of risk protection applied, if such distinctions could function as a disguised restriction on international trade. In some cases, such as a catastrophic disease that can be prevented by banning a particular product which is the host, aiming for zero risk is justifiable and feasible.

One of the challenges for environmental biosecurity is determining with sufficient certainty the likelihood of entry, establishment or spread and the potential impacts. In such cases, applying the precautionary principle is essential (see section 3.2.2). Environment NGOs recommend that an additional note is added to ^PM25 *Appropriate level of protection* (Box 5), specifying that if there is insufficient or insufficiently conclusive evidence to determine biosecurity risk, then the precautionary principle must apply.

The ALOP is intended to apply only to the national border (although this is not specified in the Bill) but a 'one biosecurity' approach requires that it also apply post-border. Environment NGOs recommend that the Bill specifies the ALOP should apply to all decisions and functions under the Act, across the biosecurity continuum. In addition, all states and territories should be urged to apply the ALOP to decisions taken under their respective legislation (as Tasmania has). Post-border risk minimisation is just as important for environmental outcomes as pre-border and at-border.

RECOMMENDATIONS

- Define Australia's ALOP as "a high level of sanitary and phytosanitary protection aimed at reducing biosecurity risks to a very low level", deleting the caveat "but not to zero".
- Include a note in 'Appropriate level of protection' (^PM25), specifying that if there is insufficient evidence to determine biosecurity risk, or if the available evidence is inconclusive in that regard, then the precautionary principle will apply.
- Aim to achieve the ALOP across the biosecurity continuum for functions under the Biosecurity Bill. Develop ALOP guidelines to explain what the ALOP entails for protecting Australia's environment, economy and human health across the biosecurity continuum.

2.3 DEFINITION OF 'ENVIRONMENT'

BOX 6. DEFINITION OF 'ENVIRONMENT', BIOSECURITY BILL[24]

environment includes:

(a) ecosystems and their constituent parts, including people and communities; and
(b) natural and physical resources; and
(c) the qualities and characteristics of locations, places and areas.

The definition of 'environment' under the Bill (Box 6) has been taken from the EPBC Act. It needs to change to specify more clearly that the Biosecurity Act is intended to protect biological diversity indigenous to Australia and the processes and resources that sustain biodiversity. The current definition encompasses too much, including people, the built environment and invasive species ("the qualities and characteristics" of very many locations, places and areas unfortunately include invasive species, often to the extent of domination). In its focus on objects, parts and resources, the definition neglects ecological processes vital to conservation. It is akin to defining humanity as an accumulation of humans and associated infrastructure, neglecting the cultural, social and economic processes that are also integral to the concept.

The definition of environment should:

- be specific to the natural environment – people and crops don't need protecting under this definition as they are protected in their own right under the Bill,
- be specific to organisms indigenous to Australia,
- encompass the full range of biological diversity – from ecosystem to genetic diversity,
- Include ecological processes – ie the interactions and connections between living and non living systems, and
- Include the non-biotic parts of the environment, such as soil.

RECOMMENDATION

➢ Change the definition of 'environment' in the Biosecurity Bill to the following:

Environment includes:

(a) Australian biodiversity – the variety of life indigenous to Australia and her external territories, encompassing ecosystem, species and genetic diversity,
(b) ecological processes – the interactions and connections between living and non-living systems, including movements of energy, nutrients and species, and
(c) natural and physical resources.

[24] There seem to be two different versions of this definition in exposure drafts, one which deletes the reference to people and communities in point (a), and deletes point (c).

3. GOVERNANCE

3.1 STRUCTURE AND DECISION-MAKING POWERS

There are major differences between the recommendations of the Beale review about institutional structure for biosecurity and the proposals in the Biosecurity Bill 2012, as outlined in Table 1.

TABLE 1. INSTITUTIONAL STRUCTURE – BEALE REVIEW RECOMMENDATIONS VS BIOSECURITY BILL

Beale review recommendations	Biosecurity Bill 2012
An independent statutory authority*, the National Biosecurity Authority*: administer the Act, manage quarantine facilities, support a national program of monitoring and surveillance of national priority exotic pests and diseases, and act as the Commonwealth's emergency response agency for incursions of pests and diseases.	The *Department of Agriculture, Fisheries and Forestry* (DAFF): administer the Act and undertake biosecurity functions as listed (left).
The Director of Biosecurity (head of Authority): undertake some of the statutory functions of the Director of Animal and Plant Quarantine set out in the *Quarantine Act 1908*, including making individual import permit decisions, either directly or by delegation, in an *ex officio* capacity would be one of the members of the National Biosecurity Commission.	The *Director of Biosecurity*, also the Secretary of DAFF, will make decisions on Biosecurity Import Risk Analyses, individual import permit decisions, approved arrangements, biosecurity zones, biosecurity control orders, first landing points, and most other biosecurity matters.
National Biosecurity Commission: an expert decision making panel, with 7 to 9 members, to undertake Biosecurity Import Risk Analyses, make Biosecurity Import Policy Determinations, provide expert advice to the Authority on policy, determine priorities for Biosecurity Import Risk Analyses and determine the internal audit and verification program related to them. Should include members with expertise in natural sciences related to risks of pests and diseases in plants, animals and humans, risk assessment and management, ecology, agricultural and food production and economic assessments.	There is no equivalent structure. The functions proposed for the Commission will mostly be undertaken by the *Director of Biosecurity*. The Agriculture Minister will be able to provide direction on priorities for Biosecurity Import Risk Analyses.

The Government has abandoned the most important reform recommended by the Beale review: to ensure that biosecurity decision-making is, and is perceived to be, independent and scientific, by establishing a statutory National Biosecurity Authority with an expert Biosecurity Commission and an independent Director of Biosecurity. No satisfactory reason has been given for this abandonment. The 1996 Nairn review of quarantine, which also recommended an independent statutory authority, emphasised its importance for community involvement:

> This will enable the Australian community to have a greater influence on quarantine policies and to develop a sense of ownership. It will also allow important issues such as the effect of quarantine decisions on the natural environment to receive due attention.[25]

[25] Nairn, M E, Allen, P G, Inglis, A R and Tanner, C ,1996. *Australian Quarantine: A Shared Responsibility* Department of Primary Industries and Energy, Canberra.

Environment NGOs strongly oppose the departmental structure perpetuated by the Biosecurity Bill and the investment of most decision-making in one person, the Director of Biosecurity, who is also the Secretary of the Department of Agriculture, Fisheries and Forestry (DAFF).

This model of decision-making is flawed, and inappropriate for biosecurity. Rather than being clearly independent of commercial and political considerations, most decision-making is invested in one person who is directed by the Minister for Agriculture in other respects of his/her role in government, and the biosecurity agency is part of the same department that seeks export opportunities and is involved in negotiating trade agreements. Rather than being systematically based on evidence of risk, much decision-making is discretionary. Rather than being transparently based on scientific evidence, much decision-making is opaque, non-reviewable and invested in one person.

If biosecurity decisions are intended to be based on scientific assessments of risk, they should derive from those who have relevant professional expertise and be subject to expert review. Environment NGOs consider that effective biosecurity requires the independent and expert-based structure and decision-making powers recommended by the Beale review. To ensure that sufficient weight is accorded to environmental considerations, the proposed Biosecurity Commission should have at least one-third of its membership with primary expertise in relevant environmental disciplines. The environmental membership should be appointed by the Environment Minister, as recommended by the Hawke review of the EPBC Act.[26]

RECOMMENDATIONS

- Implement the Beale review recommendation for biosecurity to be administered by a statutory National Biosecurity Authority, with an independent Director of Biosecurity and an expert Biosecurity Commission.
- Specify that at least one-third of Biosecurity Commissioners have primary expertise in disciplines relevant to environmental biosecurity, including ecology and conservation biology, and are appointed by the Environment Minister, as recommended by the Hawke review of the EPBC Act.

3.2 PRINCIPLES FOR POLICY DEVELOPMENT AND DECISION-MAKING

Given the complexities of biosecurity, the great diversity of stakeholders, the high environmental and other values at stake, and the contention surrounding many biosecurity decisions, it is vital to ensure that decision-making and policy processes adhere to high standards. The following requirements under international agreements and principles for decision-making are relevant:

- WTO's Agreement on Sanitary and Phytosanitary Measures (the SPS Agreement) requires that quarantine measures be determined in a manner that is transparent, consistent, scientifically based, and the least trade-restrictive.
- The Biodiversity Convention, Article 14, requires that each contracting party, "as far as possible and as appropriate" allow for public participation in procedures for impact assessments (which would include biosecurity risk assessments).
- Principle 15 of the Rio Declaration on Environment and Development provides that: "Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation" (precautionary approach).
- Guiding principle 1 for the implementation of Article 8(h), Biodiversity Convention requires that "efforts to identify and prevent unintentional introductions as well as decisions concerning

[26] The advice to the Environment Minister, reproduced in the report of the Hawke review was: "The Board for the Commission should also include environmental representatives appointed by you: - One model would be to have six members …, with two members each appointed by the Environment Minister, Health Minister and Agriculture (Primary Production) Minister."

intentional introductions should be based on the precautionary approach, in particular with reference to risk analysis… The precautionary approach should also be applied when considering eradication, containment and control measures in relation to alien species that have become established. Lack of scientific certainty about the various implications of an invasion should not be used as a reason for postponing or failing to take appropriate eradication, containment and control measures." [27]

- Australia's National Strategy for Ecologically Sustainable Development includes the following relevant guiding principles:

    - where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation (precautionary principle)
    - decisions and actions should provide for broad community involvement on issues which affect them

- The Rio Declaration, Principle 10, on Public participation says:

    > Environmental issues are best handled with the participation of all concerned citizens, at the relevant level. At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, … and the opportunity to participate in decision-making processes. States shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided.

- Best practice principles for public participation in decision-making include access to information, rights to make representations, obtaining reasons for decisions and the right to appeal against bad decisions or bad processes[28].

3.2.1 Independent, transparent and science-based decision-making

Without intending this to be a reflection on any person in DAFF or the Minister, Environment NGOs are not confident that biosecurity decisions within a departmental structure will be independent and science-based and will accord sufficient priority to environmental protection. The main decision-maker under the Biosecurity Act, the DAFF Secretary, has other roles, in particular in trade promotion, that potentially conflict with the biosecurity role, and is accountable to the Agricultural Minister in those roles. The Beale review stressed the importance of separating these roles:

> good organisation ensures appropriate separation of functions which should be conducted at arms length—for example, risk assessment/management versus the negotiation of trade access for unrelated commodities/sectors.

Environment NGOs are concerned that biosecurity will be compromised for the sake of gaining trade access, a concern shared with some industries and state governments:

> Industry and some sub-national governments are concerned that the Director of Quarantine is susceptible to pressure from foreign governments to accept imports as a quid pro quo for those countries accepting Australian exports. (Tasmanian Government)[29]

---

[27] http://www.cbd.int/decision/cop/?id=7197.

[28] Parnell M. 2004. Public participation in environmental decision-making. Environmental Defenders Office (SA).

[29] Tasmanian Government. 2002 Submission to Joint Committee of Public Accounts and Audit Review of Australia's Quarantine Function.

While the Biosecurity Bill specifies that the Agriculture Minister cannot direct the Biosecurity Director on import decisions, there is insufficient distance between the two positions to ensure independent decision-making for biosecurity.

The scientific credibility of decisions is also not assured, because of the lack of independence, and the lack of review or auditing of the merits of decisions. Only import applicants have a right to legal review of import decisions, which has the potential to bias decisions towards importation at the expense of biosecurity precaution. Not even the Inspector-General has the right to review the merits of decisions (see Section 10.2). At the very least, there is need for an independent expert panel to review the scientific merits of import decisions, on application by governments, industry or community.

There is transparency in Biosecurity Import Risk Analyses with public consultation on draft BIRAs and publication of BIRAs. But transparency is lacking on other import decisions, with is no public consultation, no review rights for other than the applicant, and no publication of risk assessments.

The Beale recommendations for an expert commission within a statutory authority would ensure a much higher level of independence, transparency and scientific credibility.

3.2.2 Precautionary principle

There is often considerable uncertainty about whether introduced species will become invasive and their likely impacts, including in combination with other impacts. Uncertainty,[30] whether due to inconclusive or insufficient evidence, is particularly prevalent and high with respect to impacts in the natural environment because of the complexity of biological interactions, the diversity of ecosystems and the unpredictability of environmental changes over time, particularly under climate change.

The approach to uncertainty is one of the most vexed and contentious issues within biosecurity – because of what is regarded by many commentators as a conflict between obligations under global trade law and those under the Biodiversity Convention. There are undoubtedly tensions between the two regimes – with the ideals of free trade promoting the global flow of goods except when there is evidence of harm and those of conservation emphasising the need for protection in the face of scientific uncertainty, in effect giving the environment the benefit of doubt – but we do not consider them inherently incompatible. Riley (2012) argues that regulators should meet the objectives of both regimes and suggests one approach based on the concept of plausibility (Box 7).

BOX 7. A PLAUSIBILITY APPROACH TO UNCERTAINTY (RILEY 2012)[31]

"In the midst of competing views, regulators should take uncertainty into account in a wider context that incorporates the objectives of each regime. Instead of the problem of IAS [invasive alien species] being viewed as a trade *or* environmental problem, it should be viewed as a trade *and* environmental problem. Since WTO processes are based on reducing uncertainty, while the CBD Guiding Principles favour reducing the effects of uncertainty, taking a relational approach means that regulators need to concede that 'solutions do not exclusively consist of eliminating or reducing uncertainty.'

"Yet, either way, regulators still need to rely on scientific evidence to determine when to implement measures and what type of measures to initiate. A suggested method lies in identifying patterns that indicate a causal link between stressors to biodiversity and resultant threats or harm to biodiversity – a concept expressed as a 'plausible hypothesis'.

[30] Riley 2012: "uncertainty may be considered as a level of knowledge that is insufficient to conclude with confidence whether a species will become invasive, whether a pathway is likely to introduce IAS, and the nature of the relationship of IAS with co-stressors to biodiversity."

[31] Riley S. 2012. Heads I win, tails you lose: Uncertainty and the protection of biodiversity from invasive alien species. Asia Pacific Journal of Environmental Law 14 (1-2): 139-168. Original citations not included.

"The concept of 'plausibility' describes a proposition that remains persuasive until an alternative is shown to be more credible. This formulation draws on the work of the ancient philosopher Carneades, who stated that: plausibility commences with the proposition that, what appears to be true is tentatively true if it is contextually consistent with 'other things that appear to be true'. As a means of dealing with uncertainty, 'plausibility' affords the following guidelines: that regulators may invoke notions of plausibility where it is not possible to determine the actual state of affairs with certainty; that a statement is not plausible if it contradicts a known state of affairs; and, that in the absence of a known state of affairs, two contradictory statements may still be plausible."

The precautionary principle is fundamental to effective biosecurity, particularly for the natural environment. The first Guiding Principle for Article 8(h) of the Biodiversity Convention requires a precautionary approach (Box 8). The precautionary principle is standard in environmental law and policy (although often poorly enacted): a weak version of the principle was endorsed in the 1992 Intergovernmental Agreement on the Environment and is in the EPBC Act (Box 8). It is required to be applied to assessments of live animal imports under the EPBC Act. The failure to include it in the Biosecurity Bill means that a higher standard is required for treatment of uncertainty in assessments of live animal imports than of plant imports, which are not assessed under the EPBC Act but have relied on assessment under the Quarantine Act.[32] Versions of the precautionary principle/ approach are in biosecurity laws in other countries, for example New Zealand's *Hazardous Substances and New Organisms Act 1996* and Norway's *Nature Diversity Act 2009* (Box 8). It is also in other similar laws such as those regulating food safety and genetically modified organisms. So, there is wide acceptance of the precautionary principle across many domains, including biosecurity.

The existing biosecurity approach of refusing entry to new organisms unless they pass a risk assessment is inherently precautionary and the risk assessment process has incorporated precautionary elements, such as requiring a certain threshold of information about risks before determining whether a particular import will be approved.

However, as the guiding principle for Article 8(h) specifies, the precautionary principle should be applied comprehensively to decisions relevant to preventing, eradicating, containing and controlling invasive species.

BOX 8. REQUIREMENTS FOR THE PRECAUTIONARY PRINCIPLE / APPROACH

Guiding Principle 1, Article 8(h), Biodiversity Convention

Guiding principle 1 requires that "efforts to identify and prevent unintentional introductions as well as decisions concerning intentional introductions should be based on the precautionary approach, in particular with reference to risk analysis… The precautionary approach should also be applied when considering eradication, containment and control measures in relation to alien species that have become established. Lack of scientific certainty about the various implications of an invasion should not be used as a reason for postponing or failing to take appropriate eradication, containment and control measures." [33]

Environment Protection and Biodiversity Conservation Act 1999

391 Minister must consider precautionary principle in making decisions
Taking account of precautionary principle
(1) The Minister must take account of the precautionary principle in making a decision listed in the table in subsection (3), to the extent he or she can do so consistently with the other provisions of this Act.
Precautionary principle

32 s303EB of the EPBC Act specifies that a list of unregulated specimens suitable for live import "is taken to include a live plant the introduction of which into Australia is in accordance with the *Quarantine Act 1908*."

[33] See http://www.cbd.int/decision/cop/?id=7197.

(2) The precautionary principle is that lack of full scientific certainty should not be used as a reason for postponing a measure to prevent degradation of the environment where there are threats of serious or irreversible environmental damage.

Norway's Nature Diversity Act 2009[34]

Section 9 (precautionary principle)
When a decision is made in the absence of adequate information on the impacts it may have on the natural environment, the aim shall be to avoid possible significant damage to biological, geological or landscape diversity. If there is a risk of serious or irreversible damage to biological, geological or landscape diversity, lack of knowledge shall not be used as a reason for postponing or not introducing management measures.

New Zealand's Hazardous Substances and New Organisms Act 1996

Section 7 Precautionary approach
All persons exercising functions, powers, and duties under this Act, including but not limited to, functions, powers, and duties under sections 28A, 29, 32, 38, 45, and 48, shall take into account the need for caution in managing adverse effects where there is scientific and technical uncertainty about those effects.

Article 2.2 of the Sanitary and Phytosanitary (SPS) Agreement requires that states apply biosecurity measures only if they are based on "sufficient scientific evidence", except if Article 5.7 applies:

> In cases where relevant scientific evidence is insufficient, a Member may provisionally adopt sanitary or phytosanitary measures on the basis of available pertinent information…In such circumstances, Members shall seek to obtain the additional information necessary for a more objective assessment of risk and review the sanitary or phytosanitary measure accordingly within a reasonable period of time.

The Beale review suggested that including the precautionary principle in the Act would lead to outcomes in conflict with Article 5.7 of the Sanitary and Phytosanitary (SPS) Agreement:

> The Panel is of the view that to the extent that adopting in the Biosecurity Act the definition of the precautionary principle in the *Environmental Protection and Biodiversity Conservation Act 1999* led to different outcomes to those that would arise from applying Article 5.7 of the SPS Agreement, there is a risk that Australia would be in breach of its obligations under that Agreement and hence would be open to challenge through the World Trade Organization dispute settlement procedures.

This opinion is too dismissive of the importance of the precautionary principle for environmental regulation.

Article 5.7 requires that member countries attempt to obtain relevant scientific information within a reasonable period of time. It does not define what is meant by "reasonable", and the Appellate Body of the WTO has indicated that the concept of reasonableness should be determined on a case-by-case basis.[35] For the natural environment, a reasonable timeframe should be interpreted from an ecological context. The most reliable (and often the only) information about the invasive potential of species is evidence from other countries with similar climate and environment where a species has been introduced. It is not uncommon for the invasive potential of a species to take many decades to manifest (>150 years in some cases). Without evidence from other countries, it is likely that uncertainties about the likely impacts of some organisms proposed for introduction, particularly in the natural environment, cannot be resolved – for example, because to resolve uncertainty would require high-risk field experimentation or because experimentation is not feasible.

[34] See http://www.regjeringen.no/en/doc/laws/Acts/nature-diversity-act.html?id=570549

[35] Riley S. 2012. Heads I win, tails you lose: Uncertainty and the protection of biodiversity from invasive alien species. Asia Pacific Journal of Environmental Law 14 (1-2): 139-168.

A failure to resolve uncertainty when there is no feasible way to obtain sufficient information on which to base a decision does not amount to a contravention of Article 5.7.[36] Although legal opinion may be divided on the precise boundaries between trade laws and the precautionary principle, Australia should give priority to harmonising biosecurity integrity and environmental protection in a way that incorporates the precautionary principle without bringing such regulation into direct conflict with the rules of the WTO.

As outlined in Guiding Principle 1 for Article 8(h) of the Biodiversity Convention, the precautionary principle should apply to decisions relevant to preventing, eradicating, containing and controlling invasive species likely to harm the environment.

One example of uncertainty that warrants application of the precautionary principle is the release of new biotypes or strains of established invasive species into the environment (see Section 5.4). In many cases there is no information available or attainable by experimentation on the likely specific additional impacts of particular new biotypes, and refusal would have to rely on precaution arising from accumulating evidence about the greater invasiveness and threats engendered by greater genetic amplitude of invasive organisms. The 'plausibility' approach advocated by Riley (2012) is appropriate for this circumstance.[37]

RECOMMENDATION

- Require application of the precautionary principle in decision-making under the Biosecurity Act.

3.2.3 Appropriate level of priority for environmental risks

The Biosecurity Act is one of Australia's most important environmental laws. The failings of national biosecurity, including in recent times, are responsible for many of Australia's worst environmental threats. Both the Beale review and the Hawke review of the EPBC Act have found that environmental biosecurity has been neglected relative to agricultural biosecurity (Box 9).

BOX 9. NEGLECT OF ENVIRONMENTAL BIOSECURITY

Hawke review

The Australian Government's agreement to the Beale Review's recommendations presents … an opportunity to embed environmental considerations as equal to those of human health and primary production in all stages of Australia's approach to managing biosecurity, that is, pre-border, at-border and post-border. …

Environmental biosecurity issues have not traditionally received the same attention as the potential impacts of pathogens, diseases, weeds or pests on primary production. A risk of integrating environmental, health and primary production considerations under a single biosecurity regime is that environmental outcomes could be compromised if the primary focus remains on trade and primary production – a problem of 'culture'.

Effective governance arrangements that embody environmental principles will be necessary to ensure that the culture of the new Authority maintains adequate consideration of the environment. To this end, the following principles should be incorporated into the new biosecurity legislation and the operational procedures for the new Authority to ensure that environmental outcomes are not compromised:

- The new biosecurity legislation should require that the environment must be given equal consideration alongside human health and economic and social consideration….

[36] Riley (2012) discusses the situation in which there does appear to be conflict: where there is a sufficient volume of evidence to undertake risk assessment but the evidence is inconclusive. The precautionary approach permits precautionary measures where the scientific evidence is inconclusive, but Article 2.2 requires scientific evidence to justify measures, except where evidence is insufficient.

[37] Riley S. 2012. Heads I win, tails you lose: Uncertainty and the protection of biodiversity from invasive alien species. Asia Pacific Journal of Environmental Law 14 (1-2): 139-168.

Beale review

In the past, the environment—terrestrial and aquatic—has received less priority than agriculture. The Panel has concluded that a more significant effort is needed in these two areas in the future, reflecting the nature of the incursion risks involved.

CSIRO provided the Panel with its analysis in relation to assessment of biosecurity risks to the environment, concluding that environmental biosecurity capacity lagged well behind business-related capacity across the biosecurity continuum. It acknowledged the complexity in predicting the impact on natural ecosystems and argued that capacity in this area needed to be built.

Environmental biosecurity has considerably less capacity – private and public funding, research expertise, administrative and technical experience, and political motivation – than industry-focused biosecurity across the biosecurity continuum, including for contingency planning, surveillance, and incursion responses. .

There is no assurance in the proposed structure and processes that environmental biosecurity will be accorded warranted priority and given equivalence in decision-making. There is no role for the Environment Minister, Environment Secretary or Environment Department, and very little role for the environmental community sector, including Environment NGOs, land managers, ecologists and other environmental experts. The Agriculture Minister has the authority to determine priorities and guidelines for BIRAs. There is no requirement for the involvement of those with expertise in ecology and environmental biosecurity in decision-making.

Environment NGOs strongly recommend that the Biosecurity Act according appropriate priority to the environment by:

- including environmental objects and principles (sections 2.1, 3.2),
- ensuring equivalence of environmental representation and expertise in all relevant consultation and advisory committees and on the recommended Biosecurity Commission, and ensuring that expertise includes ecology and conservation biology,
- mandating a role for the Environment Minister and Department in appointing environmental representatives, determining BIRA priorities and guidelines, and developing biosecurity strategies and policies,
- facilitating active community participation in biosecurity policy setting and decision-making (section 3.2.4), and
- establishing Environment Health Australia (section 4.2)

There need to be close working links between environmental and biosecurity agencies across all jurisdictions. The proposed Biosecurity Commission should report to, and have input to the agendas of, both relevant COAG Standing Councils – Primary Industries and Environment and Water.

These institutional arrangements need to be complemented by greater investment in environmental biosecurity (including contingency planning, research, surveillance) to overcome current disparities with industry-focused biosecurity.

3.2.4 Community participation

> Engagement with business and the general community on biosecurity must occur consistently and continually at several levels, from policy setting through co- regulatory alternatives to actions by individuals and companies, before, at and after the border.
>
> Beale review (2008)

The Beale review and the Federal Government have emphasised the importance of a partnership approach to biosecurity involving governments, industry and community. The 1996 Nairn review also advocated this: "[Q]uarantine is a partnership. The formulation of quarantine policies and programs must be a consultative process involving the Australian community." But the Biosecurity Bill offers few options for community participation in biosecurity policy setting or decision-making. It appears that community 'partners' are regarded as more biosecurity brawn than brain, to comply with policies and decisions that are largely shielded from their views and expertise. The roles defined for the community in the Biosecurity Bill are far from sufficient to engender a partnership.

Environment NGOs object to the lack of community rights in the following areas:

- Access to information is very limited, with no requirements in the Bill for publication of information other than for Biosecurity Import Risk Analyses and reports by the Inspector-General.
- Rights to make representations and consultation requirements are very limited, restricted to BIRAs and some Inspector-General functions.
- Involvement in policy setting is very limited, with no requirements for advisory committees or consultative committees to have any representation from the community sector (or to have any particular environmental expertise).
- Rights to obtain reasons for decisions or appeal decisions apply only to import applicants, not the community.

The lack of public participation provided for under the Biosecurity Bill contrasts with that provided for under the EPBC Act, including for decisions about new animal imports under Part 13A (Table 2).[38] Such rights have the following benefits for biosecurity by:

- maximising the potential for obtaining the best available information (there is considerable expertise within the community) and for innovative solutions to problems,
- maximising motivation for the decision-maker to make a legally correct decision (although third party appeal rights for import decisions under the EPBC Act have not been used for biosecurity reasons, it is likely that the potential for such appeals ensures that legally tight decisions are made), and
- assisting in raising biosecurity awareness and increasing expertise, leading to a higher priority for biosecurity.

TABLE 2. COMPARISON OF DECISION-MAKING PROCESSES FOR IMPORTS ASSESSED UNDER THE EPBC ACT AND THE BIOSECURITY BILL

Public participation and other features of decision-making	**EPBC Act**	**Biosecurity Bill**
Public notification of import applications and publication of assessments	Publication of of applications for imports of non-approved specimens and assessments.	No notification or publication of applications or assessments, except for BIRAs.
Rights to make representations	Formal consultation process with	Formal consultation process on

[38] Tasmania provides for consultation on these decisions:

> Stakeholders will be provided with the opportunity to comment on proposals to vary the list of species that can be imported into Tasmania. The public can do this by registering for biosecurity updates from the DPIPWE internet site. People that choose to receive information on the natural environment and wildlife will receive notification that a species is being considered for a risk assessment. The species profile will be placed on the DPIPWE website and there will be a 20 day comment period.

	invitation for public submissions.	BIRAs but not on other import decisions.
Assessment	Undertaken by proponent with advice by SEWPaC staff to Minister	Undertaken by DAFF staff
Decision-maker	Minister for Environment	DAFF Secretary
Obtaining reasons	Community right to obtain reasons for decision.	No community right, only the applicant can obtain reasons.
Appeal rights	Third party rights for judicial review.	No third party rights. Appeal rights only for the import applicant.

Environment NGOs advocate that community rights and roles under the Biosecurity Bill are at least equivalent to those provided under the EPBC Act. The rhetorical emphasis given to a partnership approach should be reflected in legislation by clearly setting out community role and rights. This warrants a dedicated chapter on community partnerships, as proposed in section 4.1.

4. ROLES AND RESPONSIBILITIES OF BIOSECURITY 'PARTNERS'

As noted, the Beale review emphasised the need for "a new partnership with business and the community". It said:

> a new approach is needed which provides a common understanding between the Commonwealth, the states, business and the community at large of their respective roles and responsibilities and how these will be met.

While there were several recommendations focused on a partnership with business (such as approved arrangements) there were no recommendations specifically addressing how to implement a biosecurity partnership with the community sector. Environment NGOs invite the Federal Government to engage with us to develop a "common understanding" about the community role in biosecurity and how to build an effective partnership. Essential to a genuine partnership is the establishment of Environment Health Australia (section 4.2)

4.1 ROLE OF ENVIRONMENT NGOS

Environment NGOs are a distinct and recognised category of community stakeholder with a clear stake in biosecurity, including:

- as advocates for and contributors to more effective environmental policies and programs (the majority of environmental gains in Australia have resulted from advocacy by Environmental NGOs),
- as active participants in biosecurity, particularly in eradication and control programs for biodiversity conservation, on public and private lands, and
- as educators and information providers to and from a much wider range of stakeholders than government agencies can hope to reach.

BOX 10. WHAT THE BEALE REVIEW SAYS ABOUT THE COMMUNITY ROLE IN BIOSECURITY

A new approach is needed which provides a common understanding between the Commonwealth, the states, business and the community at large of their respective roles and responsibilities and how these will be met…

Engagement with business and the general community on biosecurity must occur consistently and continually at several levels, from policy setting through coregulatory alternatives to actions by individuals and companies, before, at and after the border.

Members of the general community are made aware of biosecurity threats and contribute by cooperating with authorities along all points of the biosecurity continuum.

The community also has an important role in providing input into public debate and policy development on the issue.

By adhering to biosecurity requirements, people travelling between countries and regions can prevent the introduction of new pests and diseases.

Individuals assist by keeping an eye out for the unusual and reporting findings of suspected exotic pests and diseases, or events that may be a consequence of such incursions.

The community can help raise awareness of biosecurity issues more broadly and lobby business and government to develop sound biosecurity policies.

The important role that business and the community play in the early detection of high-profile pests is exemplified most recently by the detection of Khapra beetle in Perth and mango leaf gall midge on Horn Island in north Queensland.

According to the Beale review, the community has a vital role to play at all levels of biosecurity but in an entire chapter on 'A new partnership with business and the community', the community receives little mention and there are no specific recommendations about how to achieve the desired partnership (Box 10).

A lack of understanding of the potential value of the environmental community sector in biosecurity is most evident in the Beale review's recommendation that the "membership of Animal Health Australia and Plant Health Australia should be broadened to encompass environmental pest and disease issues". AHA and PHA are industry bodies. Their industry membership understandably prioritises industry issues, and environmental stakeholders would inevitably have limited rights and influence. Environmental issues are too important to be an add-on for industry bodies.

There has been only a limited role for Environment NGOs in most biosecurity institutions, in contrast to the active role they play in other environmental policy areas. Of about 20 federal biosecurity consultative forums noted by the Beale review – 14 AQIS Industry Consultative Committees, Quarantine and Exports Advisory Council (replaced by the Biosecurity Advisory Council), Animal Health Australia, Plant Health Australia, Aquatic Animal Health Committee, and Australian Wildlife Health Network – only the latter has a representative from the environmental community sector (as far as we are aware). There is apparently little or no intended role for Environment NGOs under the National Environmental Biosecurity Response Agreement (NEBRA) to respond to environmental incursions. The lack of involvement of Environment NGOs is in stark contrast to the close involvement of industry bodies in biosecurity processes – in advisory and consultative committees, contingency planning, policy setting and decisions on incursions. Industry biosecurity benefits from the work of Plant Health Australia and Animal Health Australia on contingency planning and other projects, for which there is no environmental equivalent (Table 3).

TABLE 3. COMPARISON OF PARTICIPATION BY ENGO AND INDUSTRY REPRESENTATIVES IN FEDERAL BIOSECURITY PROCESSES

Biosecurity process	Industry involvement	ENGO involvement
Biosecurity Advisory Council (advises Agriculture Minister)[39]	5 members with agricultural expertise or industry involvement.	0 members from the ENGO sector (1 member with a primary ecological focus.)
Contingency planning for incursions	Industry membership in Plant Health Australia and Animal Health Australia	No responsible body for contingency planning for environmental pests, no ENGO involvement
Responding to incursions	Represented in National Management Group for relevant incursions and through the involvement of Plant Health Australia and Animal Health Australia	No involvement in decisions on responses to incursions. No proposed role under NEBRA.
Consultative committees	Many industry-specific consultative committees; industry representation on animal health, plant health and national biosecurity committees.	Generally no representation, 1 ENGO representative recently appointed to National Biosecurity Committee Stakeholder Engagement Consultative Group.

The environmental NGO sector has a major stake in biosecurity and warrants a strong role in policy setting and decision-making by virtue of at least the following:

- a healthy natural environment is both a community right and responsibility,
- the community bears the costs of unwise biosecurity decisions in paying for and participating in control of invasive species,
- many biosecurity services are provided voluntarily by the community sector,
- there are many types of biosecurity expertise within the sector, and
- environmental biosecurity lags behind industry biosecurity in part because there are too few community representatives within biosecurity processes.

The Government's greatest ally in achieving stronger environmental biosecurity will be the community sector. There are considerable advantages to derive from community participation in policy setting and decision-making, including:

- improving the transparency and integrity of decision-making,
- availing decision-makers of information vital for sound decision-making (the community sector includes experts in many fields),
- ensuring that decisions are well justified on legal and scientific grounds,
- ensuring that the ENGO and other community sectors have a strong stake in effective biosecurity and will be motivated to work to improve biosecurity practices in the community,
- increasing biosecurity awareness and understanding in the community,

39 See http://www.daff.gov.au/biosecurity-advisory-council/membership. The Beale review recommended that the Biosecurity Advisory Council "be non-representative and consist of expertise-based members drawn from the Commonwealth, state governments, business and non-government organisations. Members would be appointed by the Minister and would have substantial experience across a range of disciplines, including agricultural, environmental and health sciences, risk assessment, business management and knowledge of operational aspects of biosecurity."

- strengthening advocacy for public and private investment in biosecurity, and
- increasing innovation in biosecurity policy due to involvement of community representatives with different perspectives, areas of expertise and ideas.

To reflect the importance attributed by the Beale review and the Government to establishing a partnership with community, Environment NGOs advocate that a chapter in the Biosecurity Bill be developed to outline community rights and roles, including to be consulted on biosecurity policy and decisions, to have access to information, to have rights to legal review of decisions and representation on consultative committees, to at least the extent specified for comparable functions under the EPBC Act (as discussed in section 3.2.4). This is not for the sake of procedural equity but because of the necessity for effective biosecurity.

RECOMMENDATIONS

- Include a 'community partnerships' chapter in the Biosecurity Act that sets out the roles and rights of the community in biosecurity decision-making and policy formation, including publication of information, consultation, representation and legal review at least equivalent to those under the EPBC Act.
- Ensure that all government committees with a focus on environmental issues include representation from the Environment NGO sector. On high level committees such as the Biosecurity Advisory Council require that there be equivalent representation from the business and environmental sectors, in recognition of the importance of biosecurity to each sector.

4.2 PROPOSAL FOR ENVIRONMENT HEALTH AUSTRALIA

Australia urgently needs a more ecological, coordinated and collaborative approach to environmental biosecurity. Invasive species are overwhelming the capacity of current biosecurity systems, as acknowledged in the State of the Environment 2011 (see section 1.1). The complexity and scale of environmental challenges warrants a comprehensive biosecurity focus facilitated by a new national body to engender a genuine partnership approach. It will not be sufficient to bolt on environmental responsibilities to existing structures and cultures.

Environment NGOs propose the establishment of a national body, Environment Health Australia, that brings together major participants in environmental biosecurity, effectively involves the community sector, and facilitates a cross-jurisdictional, cross-sector collaboration to achieve much stronger environmental biosecurity. It would be the environmental equivalent of, and collaborate with, Animal Health Australia and Plant Health Australia.

Proposed functions

Create strong environmental biosecurity foundations: Eg. Develop and promote more ecologically informed approaches to protect species, ecological communities and ecological processes from invasive species

Improve Australia's biosecurity preparedness: Eg. Develop biosecurity plans for high-risk potential environmental invaders, and surveillance protocols for environmental incursions, undertake foresighting and reporting to identify emerging and future threats, and develop strategies to limit the exacerbation of invasive species impacts under climate change.

Promote effective responses to environmental incursions: Eg. Participate in National Environmental Biosecurity Response Agreement processes and commission, co-ordinate, facilitate and manage nationally agreed environmental health and biosecurity projects, and lead preparation of AusEnvPlans to establish detailed emergency response arrangements under NEBRA.

Enhance community awareness, vigilance and action in biosecurity: Eg. Build public awareness of environmental biosecurity and support the community to become involved in biosecurity policy development

and implementation, develop best practice communication and community activation approaches in environmental biosecurity, and harness the support of foundations and NGOs.

Improve environmental biosecurity capacity – knowledge, people and resources: Eg. Facilitate governments, community groups and researchers to work together to improve environmental health in Australia, identify high priority research needs for environmental biosecurity, and identify and prioritise invasive species management actions which can be implemented to deliver development and carbon offsets.

Improve coordination and collaboration between jurisdictions, agencies and sectors: Eg. Collaborate with industry biosecurity bodies to jointly develop biosecurity responses where invaders have both environmental and industry impacts, and conduct joint research projects.

Monitor and report on Australia's progress in environmental biosecurity: Eg. Develop indicators for monitoring progress on meeting environmental biosecurity targets, and monitor and report on the establishment, spread and containment of ecologically important invasive species.

Proposed membership

Environment Health Australia would be structured to foster partnerships between major participants and stakeholders in environmental biosecurity and promote collaboration with industry bodies where there are shared interests. One potential model is that of Plant Health Australia and Animal Health Australia. Potential members include:

- Federal Government: environment and biosecurity agencies
- State/Territory Governments: environment and biosecurity agencies
- Environmental NGOs with an environmental biosecurity focus
- Indigenous land management organizations
- NRM and conservation land management organisations
- Research institutions focused on biosecurity, ecology and environmental management
- Professional bodies for people involved in environmental biosecurity
- Environmental and allied primary production industry bodies.

To foster consistent biosecurity standards across Australia, there would need to be close links between Environment Health Australia and the COAG Standing Council for Environment and Water and Standing Council for Primary Industries.

A more detailed proposal for Environment Health Australia is attached and can be downloaded from www.invasives.org.au%2Fdocuments%2Ffile%2Frpt_keepingnaturesafe.pdf. FAQs are addressed in Appendix 1. Environment NGOs advocate that the Biosecurity Bill provides for the establishment of Environment Health Australia.

RECOMMENDATION

- Establish Environment Health Australia as a partnership between community, governments and environmental businesses to focus on high priority policy and planning issues in environmental biosecurity.

4.3 ROLE OF ENVIRONMENT MINISTER AND ENVIRONMENT DEPARTMENT

The Environment Minister and the Environment Department should have defined roles under the Biosecurity Bill to ensure that environmental biosecurity receives high priority and is integrated with the environmental

biosecurity functions under the EPBC Act, including assessment of live animal imports, listing and abatement of key threatening processes, and implementation of Australia's Biodiversity Conservation Strategy 2010-2030.[40]

Currently, under the Quarantine Act, there is a requirement for a Director of Quarantine to consult with and take into account any advice from the Environment Minister over biosecurity decisions that may involve a significant risk of environmental harm (s11A-E). This has not been maintained in the Biosecurity Bill.

The Hawke review of the EPBC Act recognised the benefits and risks of integrating agricultural and environmental biosecurity, with relevant recommendations concerning the role of the Environment Minster including:

- That the proposed Biosecurity Commission should include environmental representatives appointed by the Environment Minister.
- That the Environment Minister should have a deliberative role in approving biosecurity guidelines.

If the Biosecurity Bill is not revised to establish an independent authority and expert commission, there is an even greater imperative for a substantial role for the Environment Minister and the Environment Department. For example, the Beale review recommended (#42): "The National Biosecurity Commission should have the professional capacity to assess risks to the environment and human health in a Biosecurity Import Risk Analysis to the same quality as agricultural assessments." With the Biosecurity Bill placing this function with the Secretary of DAFF instead, it is vital that the Environment Department/Minister have a role in issuing guidelines for risk assessments and reviewing and auditing risk assessments. Otherwise, Environment NGOs advocate that all live imports are assessed under the EPBC Act – as live animal imports currently are.

Under the structure proposed in the Biosecurity Bill, Environment NGOs advocate the following functions, amongst others, for the Environment Minister (equivalent to the role of the Agriculture Minister):

- issuance of biosecurity guidelines,
- determination of environmental priorities for Biosecurity Import Risk Analyses,
- appointments of environmental representatives or experts to committees, and
- direction to the Inspector-General to conduct a biosecurity review.

Environment NGOs advocate the following functions, amongst others, for the Secretary of the Environment Department (equivalent to the role of the Sectary of DAFF):

- review of all environmentally relevant risk assessments and Biosecurity Import Risk Analyses,
- declaration of Conservation Biosecurity Zones (see section 6.2),
- declaration of environmental biosecurity emergencies, and
- specification of conditions for first points of landing where there are environmental risks such as the first point of landing is in or near a World Heritage Area.

RECOMMENDATIONS

- If the Beale review recommendations for an independent biosecurity authority, director and commission are not implemented, provide for the Secretary of the Environment Department and the Environment Minister to have designated roles in decision-making and policy direction on important environmental biosecurity issues, including:
  - issuance of biosecurity guidelines and priorities for BIRAs,

[40] Currently, under the Quarantine Act 1908, there is a requirement for a Director of Quarantine to consult with the Environment Minister over decisions that may involve a significant risk of environmental harm (s 11C).

- review and auditing of environmentally relevant risk assessments, BIRAs and import decisions,
- declarations of biosecurity zones for conservation purposes,
- environmental conditions for designated first points of landing,
- declaration of environmental biosecurity emergencies, and
- advice on priorities for the Inspector-General of Biosecurity.

4.4 ROLE OF BIOSECURITY PARTICIPANTS

4.4.1 Approved arrangements

Environment NGOs support the concept of some self-regulation by biosecurity participants who have a strong track record on biosecurity, as consistent with inculcating biosecurity responsibility. To foster compliance and engender community confidence in arrangements, there is need for regular audits to verify that standards are being maintained (as is provided for under the Bill) and transparency, including publication of arrangements and audit findings. Confidentiality to protect privacy or commercial interests should be kept to the minimum necessitated by law.

RECOMMENDATION:

- Require regular audits of approved arrangements (as provided for under the Bill) and publication of the arrangements and the outcomes of audits, with confidentiality kept to the minimum necessitated by law.

4.4.2 Proposal for general biosecurity obligation

For biosecurity participants, the Biosecurity Bill provides a mix of specific requirements that must be met and the potential for requirements at the discretion of the Director of Biosecurity. No matter how comprehensive the Biosecurity Act and Regulations, and no matter how diligent the Director of Biosecurity, there will inevitably be a myriad of actions and omissions contributing to biosecurity risks that are not addressed. The Beale review emphasised the importance of biosecurity as a shared responsibility, which requires not only that biosecurity participants obey the law but that they generally take care to observe, report, and minimise biosecurity risks. Environment NGOs advocate that the shared responsibility focus be reflected in the Biosecurity Bill as a general biosecurity obligation for all biosecurity participants to take all reasonable and practical measures to prevent or minimise biosecurity risk.

A general biosecurity obligation in Queensland's Biosecurity Bill 2011 (Box 11) provides a good model. The obligation applies broadly to anyone dealing with a biosecurity matter or carrier, or carrying out an activity likely to pose a biosecurity risk. The obligation includes preventing or minimising biosecurity risk, preventing or minimising adverse effects on a biosecurity consideration and minimising the likelihood of causing a biosecurity event. Failure to discharge the obligation is an offence, and may be an aggravated offence. There is a defence of "due diligence".

RECOMMENDATION

- Require all biosecurity participants to exercise a general biosecurity obligation to take all reasonable and practical measures to prevent and minimise biosecurity risks, with provisions similar to those in Queensland's Biosecurity Bill 2011.

BOX 11. GENERAL BIOSECURITY OBLIGATION, *BIOSECURITY BILL 2011* (QUEENSLAND)

Part 1 General biosecurity obligation
22 What is a *general biosecurity obligation*
(1) This section applies to a person who deals with biosecurity matter or a carrier, or carries out an activity, if the person knows or ought reasonably to know that the biosecurity matter, carrier or activity poses or is likely

to pose a biosecurity risk.
(2) The person has an obligation (a *general biosecurity obligation*) to take all reasonable and practical measures to prevent or minimise the biosecurity risk.
(3) Also, the person has an obligation (also a *general biosecurity obligation*)—

(a) to prevent or minimise adverse effects on a biosecurity consideration of the person's dealing with the biosecurity matter or carrier or carrying out the activity; and

(b) to minimise the likelihood of causing a biosecurity event, or to limit the consequences of a biosecurity event caused, by dealing with the biosecurity matter or carrier or carrying out the activity; and

(c) not to do or omit to do something if the person knows or ought reasonably to know that doing or omitting to do the thing may exacerbate the adverse effects, or potential adverse effects, of the biosecurity matter, carrier or activity on a biosecurity consideration.

Examples of things that may exacerbate the adverse effects, or potential adverse effects, of biosecurity matter, a carrier or an activity—

- failing to isolate an infected animal from a herd
- failing to wash footwear before leaving a property on which anthrax is present
- inappropriately disposing of leaf litter containing a plant virus or disease
- failing to take reasonable steps to reduce contaminants in plants and animals, including, for example, by allowing designated animals (not including bees) to graze on land contaminated with heavy metals or by using water that may contain a contaminant to irrigate crops
- failing to manage the impact of invasive plants and animals on a person's land

23 General biosecurity obligation offence provision

(1) A person on whom a general biosecurity obligation is imposed must discharge the obligation.
Maximum penalty—

(a) if the offence is an aggravated offence—3000 penalty units or 3 years imprisonment; or

(b) if the offence is not an aggravated offence—

(i) for a breach in relation to prohibited matter—1000 penalty units or 1 year's imprisonment; or

(ii) for a breach in relation to restricted matter—750 penalty units or 6 months imprisonment; or

(iii) otherwise—500 penalty units.

(2) If the offence is not an aggravated offence, it is a defence for the person to show that the person had a reasonable excuse for failing to discharge the obligation.

24 Effect of regulation for discharge of general biosecurity obligation

(1) This section applies if a provision of a regulation (*regulation provision*) is identified in the regulation as a provision that prescribes a way of discharging a person's general biosecurity obligation.
(2) Unless otherwise stated in the regulation, the regulation provision does not prescribe all that a person to whom the provision applies must do, or must not do, to discharge the general biosecurity obligation.
(3) However, for applying the general biosecurity obligation offence provision, the person fails to discharge the general biosecurity obligation if the person contravenes the regulation provision.

25 Effect of code of practice for discharge of general biosecurity obligation

(1) This section applies if a code of practice states a way of discharging a person's general biosecurity obligation.
(2) Unless otherwise stated in the code of practice, the code of practice does not state all that a person to whom the code of practice applies must do, or must not do, to discharge the person's general biosecurity obligation.
(3) However, for applying the general biosecurity obligation offence provision, the person fails to discharge the general biosecurity obligation if the person—

(a) contravenes, or otherwise acts inconsistently with, the code of practice; and

(b) does not follow a way that is as effective as, or more effective than, the code of practice for discharging the general biosecurity obligation.

(4) Also, for applying the general biosecurity obligation offence provision, if a regulation requires a person to comply with the whole or a stated part of a code of practice to discharge the person's biosecurity obligation,

the person fails to discharge the general biosecurity obligation if the person contravenes, or otherwise acts inconsistently with, the code of practice or stated part.

26 Aggravated offences—significant damage to health and safety of people or to the economy or environment

(1) An offence is an *aggravated offence* if the commission of the offence causes significant damage, or is likely to cause significant damage, to the health and safety of people or to the economy or the environment.

(2) To prove an aggravated offence, the prosecution must prove that the person who committed the offence—

(a) intended the person's conduct to cause significant damage to the health and safety of people or to the economy or the environment; or

(b) was reckless as to whether the conduct would cause significant damage to the health and safety of people or to the economy or the environment.

27 Defence of due diligence

(1) In a proceeding for an offence against the general biosecurity obligation offence provision, it is a defence for a person to prove that the person took all reasonable precautions and exercised proper diligence to prevent the commission of the offence by the person or by another person under the person's control.

(2) Without limiting the ways in which a person proves the matter stated in subsection (1), a person proves the matter if the person proves that—

(a) the conduct alleged to constitute the offence was due to—

(i) an act or default of another person; or

(ii) reliance on information supplied by another person; and

(b) the person made all reasonable enquiries about—

(i) whether any animal, plant or other thing was the carrier of prohibited matter or restricted matter the subject of the offence alleged; and

(ii) any necessary treatments that may be required for any carrier of any biosecurity matter to rid the carrier of the biosecurity matter; and

(c) any of the following applied—

(i) the person carried out all checks on the health of any biosecurity matter or carrier of any biosecurity matter as were reasonable in all the circumstances;

(ii) if another person carried out checks on the health of any biosecurity matter or carrier of any biosecurity matter, it was reasonable in all the circumstances to rely on the checks carried out by the other person;

Example—

checks carried out by a veterinary surgeon

(iii) it was reasonable in all the circumstances to rely on checks carried out by another person who supplied any biosecurity matter or carrier of any biosecurity matter to the person; and

(d) the person took the precautions that were reasonable in all the circumstances to prevent the spread of any biosecurity matter.

(3) Also, without limiting the ways in which a person proves the matter stated in subsection (1) or (2)(c)(i), a person proves the matter if the person proves that—

(a) if a regulation prescribes a way in which a person's general biosecurity obligation can be discharged to prevent or minimise a biosecurity risk posed by the relevant biosecurity matter or carrier of the biosecurity matter—the person followed the prescribed way; or

(b) if a code of practice states a way in which a person's general biosecurity obligation can be discharged to prevent or minimise a biosecurity risk posed by the relevant biosecurity matter or carrier of the biosecurity matter—the person adopted and followed the stated way.

(4) This section is not intended to exclude the operation of the Criminal Code, section 24.

(5) In subsection (2)(a) and (c)—

another person does not include a following person—

(a) an employee or agent of the defendant;

(b) in the case of a defendant that is a body corporate, a director, employee or agent of the defendant.

5. ASSESSING IMPORT RISKS

There is little detail within the Biosecurity Bill and the Biosecurity Regulation to explain how environmental risks of imported goods will be assessed and treated. We cannot assess the likely effectiveness of the new biosecurity regime without this information.

The majority of invasive species in Australia have been deliberately imported or are associated with trade, hitchhiking on goods or transport vectors. Ensuring that all import decisions are based on rigorous and precautionary risk assessments is integral to effective biosecurity.

5.1 PRIORITISING PREVENTION

Amongst the greatest leaps forward for the Australian environment (and agriculture) was the 1998 reform of quarantine (*Quarantine Proclamation 1998*) to prohibit imports of seeds of plant taxa other than those on a permitted list, requiring new imports to be subject to risk assessment. In its first decade of operation, this reform prevented the importation of an estimated 1500 potential new weeds.[41] It is essential to maintain this 'white list' approach under the Biosecurity Act; that is, to treat all taxa or biotypes as potential biosecurity threats unless assessed otherwise.

There are many plants and some animals on the current permitted list that would not meet Australia's ALOP. The development of the list of 'conditionally non-prohibited goods' provides the opportunity to substantially reduce the risks of future new weeds and pests.

RECOMMENDATION

- Maintain the 'permitted list' approach of prohibiting entry to all plant and animal taxa other than those assessed as having a very low biosecurity risk (Australia's ALOP) or those that have established in Australia and are not under 'official control' in any region.

5.2 INDEPENDENCE, TRANSPARENCY AND SCIENTIFIC CREDIBILITY

The only way that Australia's import decisions will engender the confidence of the community and affected industry is for the process to be independent (of any agency or person with a potential conflict of interest such as responsibility for trade promotion), transparent and scientifically credible.

Independence: With import decisions to be made by the Secretary of DAFF, the Biosecurity Bill does not provide for independence. Even if most other biosecurity functions remain within DAFF, it is imperative that risk assessments and biosecurity import risk analyses are conducted independently. While the preference of Environment NGOs is for the Beale-recommended model of a biosecurity authority with a biosecurity commission, a partial measure could be the establishment of a risk assessment authority to focus just on that aspect of biosecurity or an expert biosecurity commission within the biosecurity agency.

Transparency: As with current arrangements, BIRAs will be subject to public consultation and be published but other risk assessments, which account for the vast majority of import decisions, will not be subject to consultation or published. There are many people within the community sector with the expertise to contribute valuable information to risk assessments.

[41] This includes species rejected and species requiring further evaluation. With no protocol for further evaluation, this amounts to at least a temporary refusal. Riddle B, Porritt D, Reading K. 2008. Australia's Weed Risk Assessment system and the Permitted Seeds List. Plant Protection Quarterly 23(2): 77-80

Scientific credibility: There has been much external scientific critique of certain high profile import risk analyses but most risk assessments do not have the benefit of independent scientific review because they are not published. To engender confidence in their scientific rigour, risk assessments must be scientifically reviewable. The treatment of uncertainty is particularly important from an environmental perspective. Environment NGOs share the concerns of some industries and state governments that risk assessors may strive for a quantitative assessment when this is not justified, particularly for environmental risks with high levels of uncertainty.[42]

RECOMMENDATION

Ensure that all import decisions are based on independent, transparent and scientifically credible risk assessments. If the Beale-recommended model of an independent authority and expert commission is rejected, establish a Risk Assessment Authority to undertake risk assessments and BIRAs.

5.3 ENVIRONMENTAL PRIORITIES FOR RISK ANALYSIS

Very few import risk analyses have been conducted for environmental reasons and some that have high environmental relevance – eg. edible fungi and ornamental bulbs – have lapsed uncompleted. The Biosecurity Bill provides for input by the Agricultural Minister on priorities for BIRAs. At the very least, the Environment Minister should provide equivalent directions on BIRAs from an environmental perspective. However, to ensure that risk analysis is directed to the highest priorities, including environmental, economic and health priorities, there should be a transparent prioritisation process based on degree of risk. This could be a function for the expert Biosecurity Commission (or Risk Assessment Authority) or for Plant Health Australia, Animal Health Australia and the proposed Environment Health Australia.

RECOMMENDATION

- Require that BIRA priorities are determined by systematic identification and prioritisation of risk pathways and products, with equivalent weight accorded to environmental, economic and health priorities.

5.4 RISK FACTORS AND DRIVERS

Risk assessments of all types should take into account likely environmental changes over an ecologically relevant time frame and general drivers of risk.

Climate change is expected to exacerbate the threat of invasive species to the Australian environment. It will alter the invasive range of species and create conditions, due to extreme weather events and stressed native species, conducive to the establishment and spread of invasive species. Risk assessments should take account of predicted climate changes over an ecologically relevant timeframe. The uncertainties associated with climate predictions and the fact that introduced species may become invasive only decades or centuries after introduction warrants a high degree of precaution.

Risk assessments should also account for generalised drivers of invasion for which there is insufficient taxon-specific information to determine specific outcomes. For example, there is accumulating evidence that increasing the genetic diversity of species exacerbates the likelihood of invasiveness and potential impacts –- for example, by boosting species' tolerances, range or competitiveness (see Box 12). This has resulted in the creation of 'super-invaders', including several Weeds of National Significance. But the particular impacts of new genotypes is difficult to predict. Currently, unless there are additional taxa-specific invasive risks known to be associated with new subspecies or biotypes of already established or invasive species , there is no assessment of new imports. The false operating assumption seems to be that once an exotic species has

[42] As noted in the Beale review report.

established, there is no increased risk from further imports to that region except if the imported variants have known taxa-specific impacts. The Hawke review of the EPBC Act advised that "a more systematic approach is needed for assessing proposed new imports to respond to the potential invasive risks of new variants of currently listed species."

BOX 12. RISKS OF INCREASED GENETIC DIVERSITY IN INVASIVE SPECIES

Currently, risk assessments of proposed imports of plants and animals are mostly at a species level, and new genetic material (new subspecies, cultivars, biotypes) for a permitted import can usually be introduced without risk assessment.

This approach operates on the assumption that, unless a particular variant has distinctively different traits which provide for variant-specific risks, permitting new variants won't result in additional biosecurity risk. But accumulating evidence shows that assumption to be unfounded.

Wilson et al. (2009) note that "natural dispersal pathways tend to introduce limited genetic variation from restricted sources over very large timescales, whereas human-mediated pathways tend to introduce larger proportions of genetic variation from more diverse sources over extremely short periods of geological time."[43]

The importation of new genetic material bestows invasive or potentially invasive species with more evolutionary potential to flourish under existing or changing conditions. Human breeding programs and multiple introductions can result in novel biotypes and higher genetic diversity in the invasive range of a species than in its native range. [44] Mixing of genotypes has turned some weeds into 'super-invaders'. Many of Australia's most serious weeds are hybrids with high genetic diversity – lantana (*Lantana camara*), blackberry (*Rubus fruticosus*), mesquite (*Prosopis* spp.) and spartina (*Spartina anglica*) among them.

The risks associated with importing new genetic material include (i) introducing a preadapted genotype that will flourish, (ii) increasing the chance of establishment with outcrossed species, (iii) increasing genetic variation for particular adaptive features and (iv) increasing the likelihood of adaptive evolution.[45]

Plant breeders are developing new varieties of weedy (and permitted) species to increase their tolerance of drought, frost, salinity and other environmental constraints. A kikuyu grass (*Pennisetum clandestinum*) breeding program, for example, is aiming to produce varieties that have shade and drought tolerance and resistance to disease.[46] Kikuyu is already a serious environmental weed, and recognised as part of a key threatening process in NSW, where it threatens at least 16 species.[47] Because the sale and planting of kikuyu is not regulated anywhere in Australia, new variants can be bred and released domestically or imported without risk assessment.

Hybridisation can catalyse invasion. There is evidence in at least 35 cases that invasion occurred after hybridisation.[48] Hybridisation can result in:[49]

[43] Wilson, J. R. U., E. E. Dormontt, P. J. Prentis, A. J. Lowe, and D. J. Richardson. 2009. Something in the Way You Move: Dispersal Pathways Affect Invasion Success. *Trends in Ecology and Evolution* 24: 136-45.

[44] Lavergne and Molofsky (2007). . Multiple introductions of the wetland weed canary reed grass (Phalaris arundinacea) into the US gave rise to novel genotypes that were highly invasive. There was higher genetic diversity in its invasive US range than in its native European range.

[45] Wilson, J. R. U., E. E. Dormontt, P. J. Prentis, A. J. Lowe, and D. J. Richardson. 2009. Something in the Way You Move: Dispersal Pathways Affect Invasion Success. *Trends in Ecology and Evolution* 24: 136-45.

[46] See www.agcsa.com.au/static/atm_articles/html/9_4_3b.html. "Promising selections" include "aggressive forms suitable for pasture production."

[47] Coutts-Smith A, Downey P. 2006. The Impact of Weeds on Threatened Biodiversity in NSW. *Technical series no.11*. CRC for Australian Weed Management Systems, Adelaide.

[48] Schierenbeck, K. A., and N. C. Ellstrand. 2009. Hybridization and the Evolution of Invasiveness in Plants and Other Organisms. Biological Invasions 11: 1093-1105.

- hybrid vigor – a hybrid that is more invasive than the parent forms,
- greater genetic variance and subsequent natural selection of invasive ability, or
- greater phenotypic plasticity, which may promote invasion by allowing growth in a variety of environmental conditions .

In Australia, pampas Grass (*Cortaderia selloana*) was not a major weed for decades because all the plants in gardens were female. When a new colour variant was imported – a hermaphrodite – the plants began setting seed and pampas grass became a serious environmental weed.

Risk assessments also need to account for the immense diversity of Australian ecosystems and all levels of biodiversity (including ecosystems, ecological communities, species, populations), which underpin great diversity in biosecurity risk across Australia. It is important that risk assessment protocols appropriately weight risks to small areas or to components of biodiversity. The Beale review highlighted concerns that regional differences have been neglected or inconsistently recognised in risk assessments. There is no indication yet how regional and biodiversity differences will be treated in the new regime.

To ensure that these risk factors and drivers are accounted for in risk assessments, environment NGOs recommend explicit acknowledgement of climate change, genetic variability and regional differences in the definition of biosecurity risk. This could be done by adding Notes to the definition, for example:

- Note 1. Biosecurity risk will vary over time and should be assessed over an ecologically relevant time frame that takes account of climate change and other environmental changes.
- Note 2. Biosecurity risk includes the likelihood of new gentoypes of a disease or pest combining with others to exacerbate the potential for the disease or pest to cause harm or to cause greater harm than existing genotypes.
- Note 3. Biosecurity risk varies across regions and ecosystems, and should be assessed for different levels of biodiversity, including genetic diversity.

As discussed in section 3.2.2, risk assessment protocols should invoke the precautionary principle and regulators should invoke 'plausbility' where it is not feasible to determine likely outcomes with certainty, such as those that arise from stressors such as climate change and invasion drivers such as new genetic material (see Box 12).

RECOMMENDATION

13. Define 'biosecurity risk' to (a) recognise changes through time, to require that risks are assessed over an ecologically relevant time frame taking account of climate change; (b) include the likelihood of new genotypes of a disease or pest combining with others to exacerbate the potential for the disease or pest to cause harm or to cause greater harm than existing genotypes; and (c) recognise regional differences and different levels of biodiversity (ranging from ecosystem to genetic level).

[49] Lavergne S, Molofsky J. 2007. Increased Genetic Variation and Evolutionary Potential Drive the Success of an Invasive Grass. Proceedings of the National Academy of Science 104: 3883-88.

5.5 A NATIONAL APPROACH TO RISK ASSESSMENT AND RISK MANAGEMENT

> Weed declarations have probably been influenced more by politics, institutional arrangements and community attitudes to weeds than scientific considerations … compounded by … the political nature of the process and competing interests for 'new' and 'better' plants adding to the number of weeds establishing and spreading.
>
> Australian Weeds Committee 2002[50]

The capacity of the Federal Government to effectively regulate in the pre-border domain has been compromised by failings in post-border regulation. The permitted import list currently contains many weeds and potential weeds due to the historical legacy of permissive quarantine and failures of state and territory governments to 'officially control' most weed species. More than 3000 of the 30,000 exotic plant species in Australia have naturalised and several thousand more could eventually become weedy based on records of weediness elsewhere. As the Hawke review of the EPBC Act found, the thousands of exotic plant species within Australia represent a "vast reservoir of potential future problems" and the trade and movement of most are either unconstrained or inconsistently regulated by states and territories. This was highlighted by the Hawke review as a major gap in state and territory laws:

> Movement of established, potentially damaging exotic species between States and Territories represents a substantial failure of State and Territory-based environmental regulation. Development of national protocols, in cooperation with the States and Territories, for assessing resident, potentially damaging exotic species, and for designing and implementing criteria to manage their movement within Australia, may be a useful first step towards remedying this situation.

There is no indication that State and Territory Governments will comprehensively address this major risk pathway. The Intergovernmental Agreement on Biosecurity does not address it, requiring only that if States and Territories apply biosecurity measures, they will be the "least trade restrictive" necessary to achieve Australia's ALOP, not that they will apply measures necessary to comprehensively achieve Australia's ALOP.

Environment NGOs advocate the adoption of a national risk assessment protocol for preborder and postborder application and national listings of species as the basis for a genuine 'one biosecurity' approach that systematically applies Australia's ALOP across the biosecurity continuum. The proposal for a national risk assessment protocol is consistent with that of the Nursery and Garden Industry Australia, who advocate:

> Harmonised delivery of quarantine and biosecurity arrangements – establish a National Pest Risk Assessment Framework which delivers a world class biosecurity and quarantine system to whole of industry. [51]

The proposal for national lists is consistent with a recommendation by the 2004 Senate inquiry report *Turning Back the Tide – the Invasive Species Challenge*,[52] which recommended categories included a quarantine list (invasive species of national importance whose early detection will enable cost-effective eradication), an alert list (invasive species of national importance that are naturalised with a restricted range and could be

[50] Australian Weeds Committee 2002. Principles of Weeds Legislation Discussion Paper.

[51] See http://ngia.com.au/Story?Action=View&Story_id=2085

52 Senate Environment, Communications, Information Technology and the Arts References Committee. 2004. Turning back the tide – the invasive species challenge. Report on the Inquiry into the regulation, control and management of invasive species and the Environment Protection and Biodiversity Conservation Amendment (Invasive Species) Bill 2002. Commonwealth of Australia.

eradicated or yet to establish and subject to surveillance) and a control list (invasive species that are established and whose containment or control will assist in protecting values or areas of national significance).

As provided for in section 301A of the EPBC Act, the Commonwealth (by virtue of the Biodiversity Convention and quarantine powers) can regulate trade and actions involving listed non-native species that do or may threaten biodiversity (see Box 13) The Beale review recognised that the Commonwealth has the necessary constitutional power through the quarantine powers:

> For example, the quarantine power is likely to support Commonwealth legislation that is designed to prevent the spread of pests and diseases from one part of Australia to another, regardless of whether the pest or disease is exotic or endemic.
>
> The quarantine power would also support measures to control and eradicate the pest or disease. Through a combination of powers, the Commonwealth could also enter the field in relation to the spread of pests and diseases, including weeds, across state borders and between regions within states.

BOX 13. EPBC ACT, SECTION 301A

301A Regulations for control of non-native species

The regulations may:

(a) provide for the establishment and maintenance of a list of species, other than native species, whose members:
  (i) do or may threaten biodiversity in the Australian jurisdiction; or
  (ii) would be likely to threaten biodiversity in the Australian jurisdiction if they were brought into the Australian jurisdiction; and

(b) regulate or prohibit the bringing into the Australian jurisdiction of members of a species included in the list mentioned in paragraph (a); and

(c) regulate or prohibit trade in members of a species included in the list mentioned in paragraph (a):
  (i) between Australia and another country; or
  (ii) between 2 States; or
  (iii) between 2 Territories; or
  (iv) between a State and a Territory; or
  (v) by a constitutional corporation; and

(d) regulate and prohibit actions:
  (i) involving or affecting members of a species included in the list mentioned in paragraph (a); and
  (ii) whose regulation or prohibition is appropriate and adapted to give effect to Australia's obligations under an agreement with one or more other countries; and

(e) provide for the making and implementation of plans to reduce, eliminate or prevent the impacts of members of species included in the list mentioned in paragraph (a) on biodiversity in the Australian jurisdiction.

Of high priority is development of a national containment strategy, to contain the *spread* of harmful species by regulating trade and movement, and to contain their *threat* by prohibiting the release of new genetic variants and regulating other actions that exacerbate impacts (Box 14).

BOX 14. CONTAINING SPREAD AND THREAT OF INVASIVE SPECIES

Containment is usually a geographic concept, referring to preventing the spread of an invasive species. Geographic containment should be a high priority strategy for invasive species that are beyond eradication. It is currently very poorly applied in Australia, with States and Territories permitting the continued sale and movement of many species that have established in one region into new regions.

Containment can also refer to threat. Containing a threat would require managing the factors that exacerbate environmental harm resulting from particular invasive species, such as the addition of new genetic material, interacting stressors such as climate change, and control of suppressive factors, such as other invasive species. Another example of the latter is the introduction of disease-resistant genetically modified breeds.

The Hawke review of the EPBC Act recommended that a "definitive nationally agreed list of exotic species for controlled private keeping in Australia should be created", limited initially to vertebrates known to be held that do not appear on the live import list or on State and Territory controlled noxious species lists. Any species not on the list could be seized if the owner could not prove lawful import. The Hawke review said that the list should:

- "help manage potential pest and disease risks by more easily identifying illegally imported specimens (that is, those not on the national list);
- set a baseline to prevent species not previously known to be in Australia from being kept or imported;
- assist the States and Territories to monitor the movement and keeping of exotic specimens; and
- provide more certainty for traders, breeders and the public on what specimens may be kept in Australia, the requirements associated with keeping them and the keepers' obligations."

Environment NGOs endorse this recommendation and propose that it be incorporated into the Biosecurity Bill. However, the list should exclude organisms assessed by Bomford (2008) as having a high establishment risk.[53]

The long-recognised deficiencies of post-border regulation, particularly of the trade in plants and aquarium fish, warrant use of these powers to deliver on Australia's international commitments and national targets. It won't otherwise happen for there is inconsistent commitment of state and territory governments to enact the necessary measures. The advantages of a national risk assessment protocol and national listings include:

- providing for a genuine one biosecurity system,
- containing the spread and threat of invasive species within Australia,
- reducing inconsistencies and costs to business[54] and
- improving the transparency, consistency and scientific credibility of biosecurity decisions, engendering greater community and industry confidence in the system, and
- ensuring a consistent approach to imported and domestic products, thus complying with trade laws (see Box 15).

BOX 15. ENSURING CONSISTENT TREATMENT OF IMPORTED AND DOMESTIC PRODUCTS

There is also a trade rationale for taking a national approach to post-border biosecurity. Under GATT, imported products should be treated no less favorably under the laws of an importing country than similar domestic products. Currently, a domestic plant breeder can release a new species into the horticulture or agricultural trade without any risk assessment in most states and territories but an overseas plant breeder is likely to have to pass a risk assessment. To ensure equal treatment of domestic and non-domestic industries, all products with biosecurity risk should be subject to risk assessment and only released if they meet Australia's ALOP.

[53] Bomford M. 2008. Risk assessment models for establishment of exotic vertebrates in Australia and New Zealand. Invasive Animals CRC.

[54] Nursery and Garden Industry Australia expressed concern in the Beale review about the costs to businesses that arise from different state approaches to risk assessments and the effect of variable risk management protocols. NGIA submitted that "inconsistencies across the country raise major questions surrounding the science that supports such significant differences between departmental experts".

Within Australia this should include native species proposed for introduction outside their native range. More than 600 native plant species have naturalised outside their native ranges within Australia.[55]

RECOMMENDATIONS

- Implement a 'one biosecurity' approach by adopting a national risk assessment protocol for pre-border and post-border application and establish a listing process for nationally significant invasive species to provide a risk-based approach management across the biosecurity continuum, such as provided for under the EPBC Act, s301A.
- Provide the regulatory basis for a national containment approach by regulating international and domestic trade to contain the spread and threat of invasive species threatening biodiversity.
- Provide for the development of a national list of exotic species for controlled private keeping in Australia, as recommended by the Hawke review.

6. POST-BORDER RISKS – CONTROL ORDERS AND BIOSECURITY ZONES

Environment NGOs welcome many elements of chapter 6, which provides for broad Commonwealth powers to issue biosecurity control orders and establish biosecurity response, monitoring and activity zones. These powers could be used to respond effectively to postborder biosecurity risks and threats in the natural environment. However, the decision-making model of discretionary powers invested in the Secretary of DAFF means they are unlikely to be consistently used to best effect to achieve environmental outcomes. Environment NGOs advocate that these powers be used systemically for environmental protection on the basis of expert advice and prioritisation.

6.1 BIOSECURITY CONTROL ORDERS

Environment NGOs strongly endorse the biosecurity control orders provisions allowing for assessment of biosecurity risks, implementation of biosecurity measures, management of biosecurity risks and monitoring. However, it should not be left to the sole discretion of the Biosecurity Director to determine when these powers are used, and Australia's ALOP should guide the issuance of biosecurity control orders, rather than an undefined 'unacceptable level of biosecurity risk'. We advocate that there should be flexibility to extend biosecurity control orders beyond 3 months to at least 1 year, and that the Environment Department Secretary should have equivalent powers to make biosecurity control orders where there is a biosecurity risk to a Matter of National Environmental Significance under the EPBC Act.

Environment NGOs advocate that biosecurity control orders be used systematically to respond to breaches of the national border that result in the post-border presence of potential pest or disease organisms. If an Indian house crow (that could only have arrived by travelling on a ship) is spotted or a prohibited snake (smuggled for the pet trade) is advertised for sale, it is currently up to State and Territory Governments to take action to destroy or seize them. Environment NGOs advocate that the Federal Government take ultimate responsibility for such breaches, using control orders.

Action in response to national quarantine breaches should be required rather than discretionary. To maximise the prospects of preventing the establishment or spread of newly detected organisms, the biosecurity agency

[55] Randall R. 2007. The introduced flora of Australia and its weed status. CRC for Australian Weed Management and Department of Agriculture and Food, Western Australia, Adelaide.

should be required to instigate a response within 48 hours of a detection being reported. The default response should be containment, destruction or seizure of potential pest or disease organisms (or their host) until or unless an expert body (such as the Biosecurity Commission) determines it is not feasible or justified on the basis of risk assessment or unless it becomes the target of a national or state eradication program.

RECOMMENDATIONS

- Provide for the issuance of biosecurity control orders to implement biosecurity measures, manage risks and monitor diseases or pests necessary to achieve Australia's ALOP, with a potential timeframe of at least 1 year. Provide the Environment Department Secretary with powers to make biosecurity control orders where there is a biosecurity risk to a Matter of National Environmental Significance under the EPBC Act.
- Require that biosecurity control orders are used systematically to respond to breaches of the national border that could result in the establishment of potential pest or disease organisms. Require a response by the biosecurity agency within 48 hours to a reported breach, aimed at containing, destroying or seizing a potential pest or disease unless or until assessed by an expert body as not feasible or not justified on the basis of a risk assessment.

6.2 BIOSECURITY ZONES

There is the potential to use biosecurity zones to protect high value conservation areas subject to high biosecurity risks, such as many islands. However, unless biosecurity protection of such areas is a designated Federal Government goal and there is a designated zone type, systematic protection is unlikely to occur.

Environment NGOs propose a special category of biosecurity zone for areas with high conservation values and special biosecurity needs – 'conservation biosecurity zones' – to implement biosecurity measures and plans, and conduct monitoring (see Box 16). The zones would include adjacent areas where there is a need to provide a buffer or monitor in those areas.

The proposal is consistent with the Federal Government's obligations to protect Matters of National Environmental Significance (MNES) listed under the EPBC Act. All islands with high conservation value, for example, are likely to have EPBC-listed species or ecological communities, and some are World Heritage Areas. Biosecurity arrangements should focus on all biodiversity on zoned islands, not just MNES.

As with other areas where Federal and State/Territory Governments have joint interests and obligations, there would need to be a mechanism for negotiation of bilateral agreements with States and Territories or private property owners about biosecurity arrangements. In some cases, the development of biosecurity management plans or protocols could be facilitated by the proposed Environment Health Australia, in a partnership between federal and state/territory governments, Environment NGOs and relevant experts.

Environment NGOs recommend that the Secretary of the Environment Department have power under the Biosecurity Act to make conservation biosecurity zone declarations on the advice of an independent expert body such as the Threatened Species Scientific Committee.

BOX 16. EXAMPLES OF HOW BIOSECURITY ZONES COULD HELP PROTECT HIGH VALUE CONSERVATION AREAS

Protecting islands from re-invasion by eradicated species: Australia has recently been investing substantial resources in eradicating invasive species from islands – for example, cats, rabbits and rats from Macquarie Island and goats, pigs, cats and rats from Lord Howe Island. Biosecurity zones could be established to provide the basis for implementing regulations and protocols to limit the risks of re-invasion or new incursions.
Protecting seabird nesting islands: Many islands important for seabirds are at great risk of accidental (or sometimes deliberate) release of invasive predators, such as rats and mice, or weeds or ants. Biosecurity zones could be declared to provide a nationally consistent basis for regulating activities that pose biosecurity risk

such as visitation by fishing boats or yachts.
Buffering high value areas from biosecurity risk: Although managers (whether government or private) of high value conservation areas have the lawful capacity to manage invasive species on their land, they are usually powerless to manage activities or monitor pests or diseases in adjacent areas that threaten their land. Conservation biosecurity zones could be used as the basis for managing or monitoring buffer areas to provide protection for high value areas at risk.

RECOMMENDATIONS

- Establish a category of biosecurity zone for high value conservation areas with high biosecurity risks known as 'conservation biosecurity zones', as the basis for implementing biosecurity measures, plans and monitoring. The zones should be declared by the Secretary of the Environment Department on advice by a scientific committee (eg. Threatened Species Scientific Committee), and biosecurity arrangements negotiated in bilateral agreements with state and territory governments.

7. PROTECTING AUSTRALIA'S EXTERNAL TERRITORIES AND ISLANDS

Australia's external territories and islands warrant a special focus under the Biosecurity Act because many have exceptionally high biodiversity values and subject to high biosecurity risks. Many endemic island species, particularly birds and invertebrates, have already been extirpated by invasive species.

The Biosecurity Bill offers the potential to strengthen biosecurity for Australia's external territories and islands, by:

- applying the Act to external territories, with application to Christmas Island and Cocos (Keeling) Islands already prescribed (chapter 1),
- declaring biosecurity zones (chapter 6),
- specifying first landing points of conveyances travelling from overseas (chapter 4), and
- applying ballast water provisions to all external territories and Australian and state waters (chapter 5).

As detailed below, Environment NGOs urge the Federal Government to use and extend these powers to better protect islands and external territories by:

- ensuring that the Act applies to all external territories, with the exception of Australian Antarctic Territory, which is covered by a treaty,
- creating a category of biosecurity zones to protect islands and other areas with high conservation values (section 6.2),
- ensuring that any landing points on external territories and islands are compatible with protecting conservation values and are monitored and regulated to prevent incursions, and
- applying ballast water provisions to all external waters, as proposed in the Biosecurity Bill, and regulating biofouling for all traffic to external territories and islands.

Most islands are under state or territory jurisdiction but many warrant a Commonwealth biosecurity focus because of their conservation importance and vulnerability.

7.1 EXTERNAL TERRITORIES

BOX 17. AUSTRALIA'S EXTERNAL TERRITORIES

- Ashmore and Cartier Islands
- Christmas Island
- the Cocos (Keeling) Islands
- the Coral Sea Islands
- the Australian Antarctic Territory
- the Territory of the Heard and McDonald Islands
- Norfolk Island

The Biosecurity Act will apply only to those external territories prescribed under regulation. Under the Biosecurity Bill, it is intended that only Christmas Island and Cocos (Keeling Islands) will initially be prescribed. We have been advised that prescribing external territories is dependent on a pest survey being completed (a policy rather than legislative requirement).

Because Australia's external territories are of exceptional environmental importance and highly vulnerable to invasive species, they warrant the highest level of biosecurity protection and should be fully covered by the Biosecurity Act, unless a higher level of protection can be gained such as through a biosecurity zone declaration or if biosecurity is regulated by other means (eg. management of the Australian Antarctic Territory is covered under the Antarctic Treaty).

Environment NGOs strongly support the application of ballast water requirements to all external territories, as proposed in the Bill. We advocate that biofouling is similarly regulated (section 8.2), including for all ships travelling to external territories.

Because of the high conservation values of many external territories, environment groups propose that the Secretary of the Environment Department is empowered under the Biosecurity Act to determine landing points or specify biosecurity measures to apply to any first landing points on external territories for any conveyances from overseas or other Australian territories.

RECOMMENDATIONS

- Apply the Biosecurity Act to all external territories, except for Australian Antarctic Territory.
- Apply federal ballast and biofouling regulations to all external territories and islands.
- For external territories, empower the Secretary of the Environment Department to specify the location of and conditions for first landing points.

7.2 ISLAND BIOSECURITY ZONES

Chapter 6 of the Biosecurity Bill provides the Director of Biosecurity with discretion to declare various types of biosecurity zone. As outlined in Section 6.2, such zones could be used to manage biosecurity risks in areas with high conservation values and high vulnerability to invasive species. Many of Australia's islands meet these two criteria (Box 18).

BOX 18. AUSTRALIA'S ISLANDS (WWF AND REEF CATCHMENTS 2010) [56]

More than 8300 islands occur within Australia. Effective quarantine is vital to their future. The majority of islands probably have one or more Matters of National Environmental Significance under the EPBC Act, which

[56] WWF, Reef Catchments. 2010. A national island biosecurity initiative: A proposal to build ecosystem health and resilience on Australia's islands through improved biosecurity.

warrants the Commonwealth to take a leadership role in protecting islands from invasive species.

The oceanic islands (Christmas, Lord Howe, Norfolk, Macquarie, Heard and McDonald), which arose from volcanic or tectonic action from deep oceans, have a unique biota. They have been particularly hard hit by invasive species. On Christmas Island there are more than 175 species of exotic plants and more than 100 species of exotic animals. Four of the five endemic mammals are extinct; the remaining mammal and six of the seven terrestrial reptiles and some birds are threatened by invasive species. On Lord Howe Island, five species of birds and at least 13 species of invertebrates are extinct due to rodents.

Continental islands, most of which were isolated from the mainland by rising sea levels over the past 14,000 to 6,000 years, often have unique assemblages of plants and animals, and many are havens for species extinct or threatened on the mainland. But at least 40 populations of terrestrial mammals have become locally extinct on these islands due to foxes, cats, rats, rabbits and others.

Federal leadership in biosecurity for high-value islands can be justified on the basis of recognised Commonwealth interest in protecting Matters of National Environmental Significance under the EPBC Act: ie. World Heritage listed islands and islands with EPBC-listed species or ecological communities.

WWF and Reef Catchments, supported by several other NGOs, have proposed a National Island Biosecurity Initiative. Many of the essential quarantine and surveillance measures (Box 19) could be facilitated by the declaration of conservation biosecurity zones. We recommend that the Secretary of the Environment Department have power under the Biosecurity Act to make conservation biosecurity zone declarations, on the basis of recommendations by an expert committee (such as the Threatened Species Scientific Committee), and that biosecurity management agreements for islands be negotiated with relevant State and Territory Governments or private owners.

BOX 19. NATIONAL ISLAND BIOSECURITY INITIATIVE[57]

Elements of a National Island Biosecurity Initiative should include:

- Establishing biosecurity priorities for all islands based on their ecological values and risk assessment.
- Development of biosecurity management systems for all islands. High priority and high risk islands (e.g., those with development or people living on them) should have an individual biosecurity management system; those with a lower risk can be managed via regional management systems.
- Biosecurity management systems that include both the prevention of incursions through quarantine approaches and establishment of systems to control importation of species for domestic and agricultural purposes. Biosecurity management systems should cover both terrestrial and marine organisms.
- Regular surveillance of high and medium priority islands, e.g. those with populations of threatened species that would be threatened by an invasive species such as cats or rats, and occasional surveillance of lower priority islands.
- Best practice approaches developed and/or modified from existing resources and appropriate training for island managers.
- Establishment of ready response capability including the ready availability of equipment.
- A range of tailored education programs targeted at island dwellers and visitors.

RECOMMENDATION

- Facilitate biosecurity protection of high value islands by the systematic declaration of conservation biosecurity zones as the basis for implementing quarantine measures and biosecurity plans to protect island biodiversity. The zones should be declared by the Secretary of the Environment Department on

[57] WWF, Reef Catchments. 2010. A national island biosecurity initiative: A proposal to build ecosystem health and resilience on Australia's islands through improved biosecurity.

advice by the Threatened Species Scientific Committee or other expert committee and biosecurity arrangements negotiated with state and territory governments.

8. MARINE BIOSECURITY

Invasive species are major threats to Australia's marine biodiversity. Australian waters already have an estimated 250 introduced species, another 230 cryptogenic species (whose origins are uncertain but are considered likely to be exotic) and 6 native species dispersed beyond their native range.[58] It is estimated that an additional average 3 to 4 species establish in Australian waters each year.

As vessels are the dominant vector for the dispersal of non-indigenous marine species – attached to the hull or equipment as biofouling or carried in ballast water – an adequate biosecurity regime must address these pathways. Compared to terrestrial invasive species, marine invaders have been neglected.

About 15,000 vessels arrive from overseas each year, and the numbers are growing. Marine invasion risks in Australia are rising as shipping volumes escalate.

8.1 BALLAST WATER

Environment NGOs strongly endorse the proposal for national regulation of ballast water discharge (Chapter 5). This is one of the most positive reforms of the Biosecurity Bill. We will have to reserve judgement about the adequacy of the regime as details are still to be outlined in regulations or by decision of the Director of Biosecurity. We recommend that standards be clearly defined in regulations.

RECOMMENDATION

- Adopt a national regulatory approach to ballast water, covering international and domestic traffic, for all Australian waters, as proposed in the Biosecurity Bill, with standards specified in regulations.

8.2 BIOFOULING

The Biosecurity Bill does not propose a regulatory regime for biofouling. This is a major gap in biosecurity and environmental law. We understand that the Government is currently considering whether to proceed with a regulatory or voluntary regime subsequent to consultation on a Regulatory Impact Statement analysing the costs and benefits of the regulatory and voluntary options.

Environment NGOs strongly recommend a national regulatory regime with a scope similar to that for ballast water, covering international and domestic vessels and marine infrastructure (such as oil rigs), for all Australian waters, including external territories. This is justified on environmental and economic grounds due to the high likelihood of invasions by this pathway and the serious to catastrophic consequences that can result. A voluntary regime will not be sufficient to address the risk. The Regulatory Impact Statement noted there was "limited evidence of widespread uptake" of voluntary biofouling guidelines. A consistent national approach (which also takes into account regional environmental differences) will be of benefit to business in reducing complexity arising from different state standards.

The Beale review recommended that "the Commonwealth's legislative reach should be restricted to international vessels arriving in Australia, with the states and territories retaining responsibility for domestic

[58] DAFF. 2011. Proposed Australian Biofouling Management Requirements. Consultation Regulation Impact Statement. Australian Government.

biofouling requirements." Although there is as yet no international convention covering biofouling,[59] as there is for ballast water, a national approach can be justified constitutionally on the basis of the Biodiversity Convention and the United Nations Convention of the 'Law of the Sea', article 196 of which states that "States shall take all measures necessary to prevent, reduce and control …. the intentional or accidental introduction of species, alien or new, to a particular part of the marine environment, which may cause significant and harmful changes thereto."

Current federal, state and territory approaches to biofouling are deficient (mostly non-existent) and inconsistent. The approach to biofouling management in Australia (and globally) is in its infancy, akin to the situation for terrestrial introductions several decades ago. As the Regulatory Impact Statement noted, for "most jurisdictions, the detection and identification of NIMS is by chance or through other compliance mechanisms, rather than by undertaking a targeted risk management approach specific to biofouling risks." Western Australia has the most stringent requirements, and any national approach should exceed those standards and apply them comprehensively to all vessel types, depending on individual and cumulative risks.

The environmental justification for regulation of biofouling is substantial, as biofouling is likely to be the dominant cause of marine invasions, potentially responsible for more than two-thirds of marine introductions world-wide.[60] Currently, fewer than 1% of arriving vessels are inspected for biofouling. A substantial proportion of inspected vessels (about one in four) have high priority pest species present in biofouling.

As the number of ships visiting Australia increases, the risks of biofouling introductions also increase. Although slow-moving vessels such as yachts and oil rigs tend to accumulate considerably more biofouling than fast-moving commercial ships, the cumulative risks due to commercial traffic could represent the greater risk simply due to their dominance (about 90% of vessels arriving in Australia) as well as the diversity of ports they visit.

BOX 20. BIOFOULING AS A HIGH-RISK PATHWAY FOR MARINE INTRODUCTIONS

Some recent studies have demonstrated that vessels frequently convey organisms around the world in biofouling, for example:

- Coutts and Dodgshun (2007) found about 150 species in sea-chests of 42 vessels visiting or operating in New Zealand between May 2000 and November 2004. 40% were indigenous to New Zealand, 15 % introduced, 10 % non-indigenous, and 35 % of unknown origin.[61]
- Farrapeira et al. (2007) recorded 23 species from 7 cargo vessels at a Brazilian port.[62]
- Mineur et al. (2007) recorded 31 algal taxa from 22 commercial cargo vessels, in the Mediterranean.[63]

[59] The International Maritime Organisation has endorsed the Guidelines for the Control and Management of Ships' biofouling to minimise the transfer of invasive aquatic species.

[60] 55–69 % of the ~1780 introduced marine species detected in ports and harbours globally have life-history characteristics that are consistent with attachment to and survival on vessel hulls. Hewitt C, Campbell M. 2008. Assessment of relative contribution of vectors to the introduction and translocation of marine invasive species. Report for the Department of Agriculture, Fisheries and Forestry. National Centre for Marine Conservation and Resource Sustainability Australian Maritime College.

[61] Coutts A, Dodgshun T. 2007. The nature and extent of organisms in vessel sea-chests: A protected mechanism for marine bioinvasions. Marine Pollution Bulletin 54: 876-886.

[62] Farrapeira C, Melo A, Barbosa D, Silva K. 2007. Ship hull fouling in the port of Recife, Pernambuco. Brazilian Journal of Oceanography, *55*(3), 207-221.

[63] Mineur F, Johnson M, Maggs C, Stegenga H. 2007. Hull fouling on commercial ships as a vector of macroalgal introduction. Marine Biology 151: 1299–1307.

- Sylvester and MacIsaac (2009) found 57 species on 20 commercial vessels (16 bulk carriers and 4 chemical tankers) in North American ports.[64]
- Otani et al. (2007) found 22 barnacle species on two bulk carriers in a Japanese port, the majority not recorded in that port.[65]

All vessels should be required to undertake the risk-minimisng measures specified in the biofouling guidelines specific to different types of vessels[66] rather than leave it to voluntary compliance. There should be enforcement regimes and penalties sufficiently robust to motivate compliance, and the potential for the government to recover all costs of responding to a marine pest incursion from the person or organisation responsible for the introduction (but it will be impossible to trace back in most cases).

RECOMMENDATION

- Adopt a national regulatory approach to biofouling, covering international and domestic traffic, for all Australian waters.

9. BIOSECURITY STRATEGY AND ACTION PLANS

An essential complement to biosecurity laws is a biosecurity strategy (or strategies) and action plans that identify the priorities, targets and actions necessary to achieve national environmental, health and economic goals. The Guiding Principles for the implementation of Article 8(h) of the Biodiversity Convention emphasise their importance and identify important elements (Box 21).

Currently, Australia has an 'Australian Weeds Strategy', and an 'Australian Pest Animal Strategy'. Invasive species is also an important component of the 'Australian Biodiversity Strategy 2010-2030'. The proposed biosecurity strategy would encompass and build on existing strategies and address other invasive species categories (eg. invertebrates, fungi and pathogens) and priority gaps. It should specify targets. Action plans should detail the actions needed, including costs, to achieve the invasive species target in the Biodiversity Strategy, as well as other environmental and economic targets.

The requirement for a strategy (or strategies) and actions plans should be included within the Biosecurity Act. It should specify a requirement for annual progress reports and 5 yearly reviews. Their development and implementation should manifest a partnership approach, and meaningfully involve the community and environmental sectors. There has been almost no involvement of these sectors in the development of current strategies. The proposed Environment Health Australia would be an ideal forum for the development of environmental components.

BOX 21. INVASIVE SPECIES STRATEGIES AND ACTION PLANS (GUIDING PRINCIPLES FOR THE IMPLEMENTATION OF ARTICLE 8(H), BIODIVERSITY CONVENTION)[67]

National invasive alien species strategies and action plans

[64] Sylvester F, MacIsaac H, 2009. Is vessel hull fouling an invasion threat to the Great Lakes? Diversity and Distributions 16: 132-143.

[65] Otani M, Oumi T, Uwai S, et al. 2007. Occurrence and diversity of barnacles on international ships visiting Osaka Bay, Japan, and the risk of their introduction. Biofouling 23: 277-286.

[66] http://www.marinepests.gov.au/.

[67] COP 6 Decision VI/23. See http://www.cbd.int/decision/cop/?id=7197

The Conference of the Parties ….

Urges Parties and other Governments, in implementing the Guiding Principles, and when developing, revising and implementing national biodiversity strategies and action plans to address the threats posed by invasive alien species, to:

a. Identify national needs and priorities;
b. Create mechanisms to coordinate national programmes;
c. Review, in the light of the Guiding Principles, relevant policies, legislation and institutions to identify gaps, inconsistencies and conflicts, and, as appropriate, adjust or develop policies, legislation and institutions;
d. Enhance cooperation between the various sectors, including the private sector that might provide pathways or vectors for the unintended transfer of invasive alien species, in order to improve prevention, early detection, eradication and/or control of invasive alien species, and in particular, ensure communication between focal points of respective relevant international instruments;
e. Promote awareness of the threats to biological diversity and related ecosystem goods and services posed by invasive alien species and of the means to address such threats, among policy makers at all levels of government, and in the private sector; quarantine, customs and other border officials; and the general public;
f. Facilitate the involvement of all stakeholder groups, including in particular indigenous and local communities, and the private sector, as well as all levels of government, in national invasive alien species strategies and action plans, and in decisions related to the use of alien species that may be invasive;
g. Collaborate with trading partners and neighbouring countries, regionally, and with other countries, as appropriate, in order to address threats of invasive alien species to biological diversity in ecosystems that cross international boundaries, to migratory species, and to address matters of common interest;

RECOMMENDATION

- Include a requirement in the Biosecurity Act for the development of a Biosecurity Strategy and Action Plans, to be developed in a partnership between government, industry and community, jointly led by the Environment and Agricultural departments, setting out how Australia will meet relevant obligations under the Biodiversity Convention and targets in the Biodiversity Conservation Strategy, among others. Require annual progress reports and 5 yearly reviews.

10. REPORTING AND AUDITING

10.1 REPORTING AND INFORMATION FLOW

Biosecurity in Australia is largely opaque, with limited flow of information about most aspects of biosecurity performance (Box 22), including about new incursions, organisms intercepted or detected, inspection rates, applications for imports, applications approved and rejected, individual risk assessments, enforcement actions, and the status of introduced species. Apart from reporting by the Inspector-General of Biosecurity, there are no provisions in the Biosecurity Bill to improve information flow and transparency.

Information essential to environmental biosecurity is particularly lacking. There is no baseline against which to assess Australia's progress towards its 2015 invasive species target in the Biodiversity Conservation Strategy 2010-2030. State of the Environment reports typically evaluate responses to invasive species by listing "plans,

strategies and inputs to management, but rarely report on the effectiveness of processes or on outputs and outcomes."[68]

BOX 22. INFORMATION FLOW IN BIOSECURITY (COOK 2010)[69]

In reality, the flow of information between and within national biosecurity systems appears limited. Interception records associated with traded commodities are rarely published, and when available are of limited use in quantitative risk assessments as the total number of inspections (i.e., including negative finds, where no organisms are found) are either not recorded, or haphazardly classified. Data are not made readily available to parties outside government agencies who could benefit from it, such as research institutions or other biosecurity agencies, possibly facing similar threats. Moreover, estimates of the probability of an incursion, establishment, spread, and impact are seldom validated if and when a target IAS is detected.

The flow of biosecurity-related information between trading partners is also limited, giving rise to the tendency for governments to overlook net social and economic gains from trade due to unknown IAS risks.

Information collection and publication is vital for the following biosecurity functions:

- establishing a baseline against which to assess progress to biosecurity goals and targets,
- evaluating progress towards achieving biosecurity targets and goals,
- auditing performance of biosecurity functions, including risk assessments, surveillance, inspections, interceptions, eradications, containment, and control,
- identifying emerging biosecurity risks to enable the development of preventative policy, and
- sharing information about risks with biosecurity participants, including internationally.

Environment NGOs advocate the following mandated reporting requirements:

- outlook reports on emerging biosecurity risks and policy options, and
- state of biosecurity reports including progress in achieving biosecurity goals and targets in the Biosecurity Strategy, performance of biosecurity functions and programs and data such as species interceptions and spread.

Environment Health Australia could be commissioned to undertake some of the environmentally relevant reporting functions.

RECOMMENDATION

- Mandate the following reporting requirements:
  - biosecurity outlook reports (every two years)
  - state of biosecurity reports (annual), including on progress to achieve targets in the Biosecurity Strategy.

10.2 AUDITING

Independent auditing of and reporting on biosecurity performance is essential. Environment NGOs support the Beale review recommendations for an auditing unit to conduct audits across the biosecurity continuum, with

[68] State of the Environment 2011 Committee, 2011. Australia State of the Environment 2011. Independent report to the Australian Government Minister for Sustainability, Environment, Water, Population and Communities.

[69] Cook D, Liu S, Murphy B, Lonsdale W. 2010. Adaptive approaches for biosecurity governance. Risk Analysis 30 (9): 1303-1314.

audit priorities determined by the Biosecurity Commission and for a statutory office of Inspector General of Biosecurity with comprehensive audit powers.

We acknowledge that an auditing unit has been established and support the *Inspector-General of Biosecurity Bill 2012*. However, there are limitations in the proposed auditing powers of the Inspector-General. S/he will have no powers to audit decisions, including import decisions, the outcomes of BIRAs and any scientific analysis. Thus, the only review of decisions by the Director of Biosecurity will be when an import applicant challenges an import decision or if a country makes a complaint to the World Trade Organisation.

These restricted audit powers would be acceptable if decision-making was clearly independent, expert-based and transparent, but with the model proposed under the Biosecurity Bill, with decision-making power invested in one person, with no requirement for publication or potential for expert review, there is need for an audit function encompassing the merits of decisions.

Environment NGOs strongly endorse the advice of the Beale review that biosecurity programs related to environment and health responsibilities undertaken on behalf of the Environment Department and Health Department should be audited. This includes important functions under the EPBC Act, such as assessments of proposed imports of live plant specimens, which have been delegated to the biosecurity agency. We recommend that an expert environmental audit unit should be established to review biosecurity decisions with environmental consequences. The director of the audit unit should have powers similar to the Inspector-General of Biosecurity with the additional capacity to audit decisions. This unit should report to the Environment Minister and all reports should be published. If there are adverse findings, delegation of functions under the EPBC Act should be withdrawn.

.

BOX 23. BEALE REVIEW RECOMMENDATIONS ON AUDITING

The National Biosecurity Authority should establish an internal audit group to inquire and report on the adherence by the Authority to its policies and their adequacy to deal with risks across the biosecurity continuum.

a The responsibilities of this group should include both financial and performance audits of the Authority's programs.

b The internal audit program should cover the National Biosecurity Authority's activities over an audit cycle.

c The audit reports should be provided to the National Biosecurity Commission and the Director of Biosecurity.

In relation to the National Biosecurity Authority's internal audit program, the National Biosecurity Commission should have:

a a determinative role for audit activities that relate to Biosecurity Import Policy Determinations; and

b an advisory role in relation to the overall internal audit program.

The Commonwealth should establish within the Department of Agriculture, Fisheries and Forestry, a statutory office of the Inspector General of Biosecurity that will audit and report on the performance of the National Biosecurity Authority. The legislation should provide that the holder of this office have appropriate skills in relevant scientific and auditing or systems assessment disciplines.

RECOMMENDATIONS

- Adopt the Beale review's recommendation for a statutory office of Inspector General of Biosecurity as proposed in the *Inspector-General of Biosecurity Bill 2012*.
- Establish an expert environmental audit unit to review biosecurity systems and decisions relevant to the environment. This unit should report to the Environment Minister and all reports should be published.

11. ENFORCEMENT

Environment NGOs endorse the provisions providing for a wide array of enforcement tools, including civil remedies, infringement notices, enforceable undertakings and injunctions.

11.1 ENFORCEMENT AND THE COMMUNITY

Members of the community are important allies to the Government in enforcing the Biosecurity Act, but are hamstrung by the lack of requirement for publication of information about biosecurity and the lack of legal standing for the community to have decisions reviewed and to seek injunctions against unlawful activities. Environment NGOs advocate that there be third party rights of review and injunctions at least equivalent to those under the EPBC Act (Box 24).

BOX 24. EPBC ACT, REVIEW AND INJUNCTION RIGHTS REGARDING IMPORTS OF LIVE SPECIMENS

Imports of regulated live specimens

303GJ Review of decisions

(1) An application may be made to the Tribunal for review of a decision:

(a) to issue or refuse a permit; or
(b) to specify, vary or revoke a condition of a permit; or
(c) to impose a further condition of a permit; or
(d) to transfer or refuse to transfer a permit; or
(e) to suspend or cancel a permit; or
(f) to issue or refuse a certificate under subsection 303CC(5); or
(g) of the Secretary under a determination in force under section 303EU; or
(h) to make or refuse a declaration under section 303FN, 303FO or 303FP; or
(i) to vary or revoke a declaration under section 303FN, 303FO or 303FP.

(3) In this section:
permit means a permit under this Part.
Tribunal means:

(a) before the commencement of Parts 4 to 10 of the *Administrative Review Tribunal Act 2001*—the Administrative Appeals Tribunal; and
(b) after the commencement of Parts 4 to 10 of the *Administrative Review Tribunal Act 2001*—the Administrative Review Tribunal.

Injunctions

475 Injunctions for contravention of the Act

Applications for injunctions
(1) If a person has engaged, engages or proposes to engage in conduct consisting of an act or omission that constitutes an offence or other contravention of this Act or the regulations:

(a) the Minister; or
(b) an interested person (other than an unincorporated organisation); or
(c) a person acting on behalf of an unincorporated organisation that is an interested person;

may apply to the Federal Court for an injunction.

Prohibitory injunctions
(2) If a person has engaged, is engaging or is proposing to engage in conduct constituting an offence or other contravention of this Act or the regulations, the Court may grant an injunction restraining the person from engaging in the conduct.
…
Meaning of interested person—individuals
(6) For the purposes of an application for an injunction relating to conduct or proposed conduct, an individual is an interested person if the individual is an Australian citizen or ordinarily resident in Australia or an external

Territory, and:

(a) the individual's interests have been, are or would be affected by the conduct or proposed conduct; or

(b) the individual engaged in a series of activities for protection or conservation of, or research into, the environment at any time in the 2 years immediately before:

(i) the conduct; or

(ii) in the case of proposed conduct—making the application for the injunction.

Meaning of interested person—organisations

(7) For the purposes of an application for an injunction relating to conduct or proposed conduct, an organisation (whether incorporated or not) is an interested person if it is incorporated (or was otherwise established) in Australia or an external Territory and one or more of the following conditions are met:

(a) the organisation's interests have been, are or would be affected by the conduct or proposed conduct;

(b) if the application relates to conduct—at any time during the 2 years immediately before the conduct:

(i) the organisation's objects or purposes included the protection or conservation of, or research into, the environment; and

(ii) the organisation engaged in a series of activities related to the protection or conservation of, or research into, the environment;

(c) if the application relates to proposed conduct—at any time during the 2 years immediately before the making of the application:

(i) the organisation's objects or purposes included the protection or conservation of, or research into, the environment; and

(ii) the organisation engaged in a series of activities related to the protection or conservation of, or research into, the environment.

RECOMMENDATION

- Provide third party rights for review of decisions and to seek injunctions to restrain unlawful activity equivalent to those available under the EPBC Act for decisions and activities relating to imports of live specimens.

11.2 SMUGGLING AND POSSESSING ILLEGAL PLANTS AND ANIMALS

The Biosecurity Bill has offences for receiving or possessing prohibited or conditionally non-prohibited goods brought or imported into Australia (^MG310 , ^MG311) but they do not apply if:

a) the goods were not brought or imported into Australian territory; or
b) the defendant did not bring or import the goods into Australian territory;

This means that anyone who is further along the chain of receiving illegally imported plants or animals or their progeny does not commit an offence under the Biosecurity Act. The unauthorised plants or animals could be seized under a biosecurity control order. However, the lack of any offence leaves a substantial deterrence gap. Environment NGOs recommend there be an obligation on anyone selling, giving or receiving plants and animals to verify that they are legal, and that it is an offence If a person accepted goods knowing, suspecting, or in willful disregard of whether the goods were illegally imported or derived from illegally imported goods. This would be facilitated by the development of a national list of exotic species for controlled private keeping in Australia, as recommended in section 5.

We recommend that it is also an offence to export or attempt to export goods to other countries where they are illegal. This is an important part of being a virtuous biosecurity participant internationally (see next section). The proposed General Biosecurity Obligation could include a relevant obligation.

RECOMMENDATION

- Create an offence of accepting goods knowing, suspecting, or in willful disregard of whether the goods were illegally imported or derived from illegally imported goods.

12. EXPORTING BIOSECURITY RISKS

The Biosecurity Bill does not provide any scope or powers to regulate exports or the movement of conveyances or people from Australia to other countries. Exports of live organisms can constitute a biosecurity risk for Australia or for the receiving country.

For Australia, our exporting of native species to other countries can facilitate the adaptation of exotic pathogens. For example, Australia's export of eucalypts to countries where Eucalyptus/myrtle rust is endemic has facilitated the adaptation of the pathogen to Australian plants, thereby exacerbating the disease risk for Australia. The same process is occurring for Australian Acacias, which are grown in plantations in countries where endemic pathogens are jumping hosts to infect them.[70] The consequences of these pathogens entering Australia could be very severe for the natural environment and plantation and crop industries. Environment NGOs recommend that approval for export of native species, particularly those to be grown as crops, should be contingent on a risk assessment.

The export or accidental transport of species from Australia can also be harmful for the receiving country. Under customary international law, countries have duties to each other to consider such risks:[71]

> In accordance with customary international law, States have a duty to prevent, reduce and control environmental harm and a duty to cooperate to mitigate transboundary environmental risks. In particular, no State has the right to use or permit the use of its territory in such a manner as to cause serious injury to the territory of another State. Customary international law also obliges States to cooperate with respect to environmental matters.

In New Zealand, brushtail possums are invasive and highly damaging. Work was initiated on a transgenic possum-specific nematode (or virus) expressing proteins that inhibit possum fertility. However, Australia would rightly expect New Zealand authorities to fully consider the risks of inadvertent or illegal transfer to Australia to brushtail possums in Australia, so it is unlikely to proceed.

Environment NGOs advocate that the Biosecurity Act promote responsible international citizenship by Australia by requiring risk assessment of actions that can potentially harm the environment or economy of other countries. Australia has international obligations under the IPCC and the Biodiversity Convention to exchange biosecurity information with other countries and to prevent or minimise risks to other countries (see Box 25). Although not directly relevant, Part 13A of the EPBC Act includes an object to conserve biodiversity in other countries.

Examples of potential risks that should be covered in the legislation include:

- the release of biological control agents in Australia that could potentially impact on biodiversity in other countries if they were liable to illegal or accidental transfer: this risk should be assessed as part of approval processes,

[70] Booth C. 2011. Overseas incubators. Feral Herald 27: 1-2 (and references cited).

[71] Riley S. 2009. Preventing transboundary harm from invasive alien species. RECIEL 18: 198-210.

- the export or smuggling of organisms from Australia that are potentially a pest species in recipient countries: the Biosecurity Act could require that all exports of live specimens should require a permit, the criteria for which include consideration of biosecurity risk to the intended recipient country,[72] and
- a conveyance with high risk biofouling organisms leaving Australian waters: there could be an obligation to advise potential destination countries when a conveyance subject to a biocontrol order leaves Australian territory or to prevent the conveyance leaving if the biosecurity risk is also a risk to other countries.

BOX 25. AUSTRALIA'S OBLIGATIONS TO CONSIDER RISKS TO OTHER COUNTRIES

Convention on Biological Diversity

Article 3: States have . . . the sovereign right to exploit their own resources . . . and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.

Article 5: Each Contracting Party shall, as far as possible and as appropriate, cooperate with other Contracting Parties . . . in respect of areas beyond national jurisdiction . . . for the conservation and sustainable use of biological diversity.

Article 14: Each Contracting Party shall, as far as possible and as appropriate:

…

(c) Promote, on the basis of reciprocity, notification, exchange of information and consultation on activities under their jurisdiction or control which are likely to significantly affect adversely the biological diversity of other States or areas beyond the limits of national jurisdiction, by encouraging the conclusion of bilateral, regional or multilateral arrangements, as appropriate;

(d) In the case of imminent or grave danger or damage, originating under its jurisdiction or control, to biological diversity within the area under jurisdiction of other States or in areas beyond the limits of national jurisdiction, notify immediately the potentially affected States of such danger or damage, as well as initiate action to prevent or minimize such danger or damage; and…

Object (c) of EPBC Act Part 13A (Section 303BA)

(1) The objects of this Part are as follows:

…

(c) to promote the conservation of biodiversity in Australia and other countries

RECOMMENDATIONS

- Expand the scope of the Biosecurity Act to require assessment of the biosecurity risks of exporting particular live specimens, including risks for Australia (due to the potential adaptation of exotic pathogens to Australian species grown overseas) and for recipient countries.
- Require the Biosecurity Director to notify other countries of potential biosecurity risks originating within Australia or in transit through Australian territory, and to prevent or minimise those risks to other countries when feasible.
- Require that biosecurity risks to neighbouring countries be included in the assessment of biological control agents.

[72] The EPBC Act regulates the export of native species but biosecurity risk to the recipient country is not one of the criteria assessed.