

IMPROVING ENVIRONMENTAL BIOSECURITY?

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Environmental biosecurity (involving weeds and invasive alien animals) has long been a major problem in Australia, with significant and growing negative impacts on the natural environment, public amenity and the economy. Successive State of the Environment Reports have confirmed that environmental biosecurity problems are growing rather than shrinking. There have been several major reviews of overall biosecurity arrangements over the last forty years. A 2015 Senate Committee report on environmental biosecurity was the first formal national inquiry devoted solely to environmental biosecurity. Submissions and evidence before the Senate inquiry exposed a wide range of constraints hindering improved environmental biosecurity, such as the disadvantage generated by the historical development of quarantine and biosecurity in Australia, unhelpful government action on budgets and research, the relationship between trade and environmental obligations and market failure. There are further problems on the horizon as a result of global changes to biodiversity, climate, oceans, land forms, hydrology and from pollution effects. The Report, the Commonwealth government's response to it, and subsequent developments, highlight the need for a more concerted effort to improve environmental biosecurity. This article concludes that the ground has not shifted enough in favour of adequate arrangements for improved environmental biosecurity as a result of the Senate Committee report and subsequent developments. The situation with the identified constraints is unlikely to change markedly in the foreseeable future. The next best step would appear to be development of new approaches within the existing arrangements and resources.

I INTRODUCTION

This article examines the relationship between general biosecurity and environmental biosecurity and explains how and why environmental biosecurity lags behind health and industry biosecurity. It argues that the limited changes in the biosecurity management framework since the first formal inquiry into environmental biosecurity by a Senate Committee in 2014–15¹ will not meet current and predicted challenges for environmental biosecurity. If we continue to rely on incremental changes the reform effort will not keep

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¹ Senate Environment and Communications References Committee, Parliament of Australia, *Environmental Biosecurity* (2015) ('Senate Environmental Biosecurity Report').

pace with the growth of environmental biosecurity problems.² I will argue that more fundamental changes in biosecurity law and administration are required.

The next section defines and describes environmental biosecurity and indicates how environmental biosecurity is different from and inherently more complex than general or industry biosecurity. It explains why environmental biosecurity is truly a wicked problem and highlights the implications for reform.³ Following that, in the next two sections I describe the history, significance and outcomes of the Senate Committee inquiry in 2014–2015. I argue that the results of the both the Senate Committee’s inquiry and the Government’s response to it are inadequate — essentially a ‘business as usual’ approach. Next, I analyse the still prevailing constraints and challenges for environmental biosecurity evident from the Senate Committee inquiry and more recent developments. I demonstrate why a ‘business as usual’ approach will not be adequate and offer some suggestions for improvement. In the concluding section I argue that, as fundamental change is unlikely in the foreseeable future, the next best step is to develop new approaches within the existing arrangements and resources. New regimes in the states may provide a platform for developing and implementing new approaches.

This article uses the background, processes and outcomes of the Senate Committee inquiry as the basis for identifying and examining progress with managing environmental biosecurity problems. The large number of submissions and presentations to the Committee provide a comprehensive, and probably best available, collection of information about environmental biosecurity. Several relevant subsequent developments, as set out in Table 1, are also considered in so far as they relate to the constraints and challenges affecting environmental biosecurity.

Table 1

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| <ul style="list-style-type: none"> • <i>National Framework for the Management of Established Pests and Diseases of National Significance</i> (2016)⁴ • <i>National Environment and Community Biosecurity Research, Development and Extension Strategy</i> (2016)⁵ • <i>Report on the Review of the First Five Years of Australia’s Biodiversity Conservation Strategy 2010–2030</i> (2016)⁶ |
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² See, eg, Department of Environment, *Report on the Review of the First Five Years of Australia’s Biodiversity Conservation Strategy 2010–2030* (2016) 35 (*‘First Five Years of Australia’s Biodiversity Conservation Strategy Review Report’*); William Jackson et al, Department of the Environment and Energy, ‘Australia: State of the Environment 2016’ (2017) 17–20 — ‘Invasive Species are a Potent, Persistent and Widespread Threat to Australia’s Environment’ (*‘State of the Environment 2016’*); Paul Martin and Darryl Low Choy, ‘Recommendations for the Reform of Invasive Species Management Institutions’ (Report, Invasive Animals Cooperative Research Centre, 2016) 2.

³ The use of ‘wicked’ is explained in subsequent parts of this article.

⁴ National Biosecurity Committee, Department of Agriculture and Water Resources, *National Framework for the Management of Established Pests and Diseases of National Significance* (2016) (*‘Established Pests and Diseases Management Framework’*).

⁵ Department of Agriculture and Water Resources, *National Environment and Community Biosecurity Research, Development and Extension Strategy 2016 to 2019* (2016) (*‘National Environment and Community Biosecurity RD&E Strategy’*).

- *Australia: State of the Environment 2016* (2017)⁷
- *Australian Weeds Strategy 2017–2027* (2017)⁸
- *Australian Pest Animal Strategy 2017–2027* (2017)⁹
- *Review of the Intergovernmental Agreement on Biosecurity* (2017)¹⁰
- *Review of the National Environmental Biosecurity Response Agreement* (2017)¹¹
- *Report on the Review of the National Landcare Program* (2017)¹²
- Establishment of Environmental Biosecurity Roundtable Processes (2017)¹³
- National Environmental Biosecurity Stocktake (2018)¹⁴

II SIGNIFICANCE OF ENVIRONMENTAL BIOSECURITY AND ITS DISTINGUISHING CHARACTERISTICS

Environmental biosecurity, ‘the protection of the environment and social amenity from the negative effects associated with invasive species; including weeds, pests and diseases,’¹⁵ has been gaining in prominence as an important issue over the last few decades. Environmental biosecurity is broader in scope than industry biosecurity, which is aimed at mitigating risks from pests and diseases to particular industries.

The following factors distinguish environmental biosecurity from industry biosecurity:¹⁶

- the number of species and ecosystems far exceeds those for industry;
- much less is known about environmental assets than industry assets;
- there are more species of concern in the environment than in industry;
- there are readily identifiable economic impacts of agricultural biosecurity threats;
- it is difficult to predicting the impact of an alien species on the environment;

⁶ *First Five Years of Australia’s Biodiversity Conservation Strategy Review Report*, above n 2.

⁷ *State of the Environment 2016*, above n 2.

⁸ Invasive Plants and Animals Committee, Department of Agriculture and Water Resources, *Australian Weeds Strategy 2017–2027* (2017).

⁹ Invasive Plants and Animals Committee, Department of Agriculture and Water Resources, *Australian Pest Animal Strategy 2017–2027* (2017).

¹⁰ Wendy Craik, David Palmer and Richard Sheldrake, Department of Agriculture and Water Resources, *Priorities for Australia’s Biosecurity System: An Independent Review of the Capacity of the National Biosecurity System and its Underpinning Intergovernmental Agreement* (2017) (*Review of the Intergovernmental Agreement on Biosecurity*).

¹¹ KPMG, ‘National Environmental Biosecurity Response Agreement: Five Year Review’ (Report, May 2017) (*Review of the National Environmental Biosecurity Response Agreement*).

¹² The Department of the Environment and Energy and the Department of Agriculture and Water Resources, *Report on the Review of the National Landcare Program* (2017) (*National Landcare Program Review Report*).

¹³ See Department of Agriculture and Water Resources, *Environmental Biosecurity* (29 March 2018) <<http://www.agriculture.gov.au/biosecurity/environmental#2017>>.

¹⁴ Department of Agriculture and Water Resources and Department of the Environment and Energy, *2017 Environmental Biosecurity Roundtables: Sydney Summary Report* (2017).

¹⁵ Community Information Unit, Department of the Environment and Energy, *Invasive Species*, <<http://www.environment.gov.au/biodiversity/invasive-species>>.

¹⁶ *Senate Environmental Biosecurity Report*, above n 1, 23–6.

- the size and complexity of the natural environment makes management more difficult;
- surveillance of the natural environment is far more difficult than surveillance of an industry site;
- there are no committed stakeholders in the way there are for industry; and
- there are more limited resources available than for industry biosecurity.

Invasive species (along with habitat destruction) are one of the two key threats to Australia's biodiversity.¹⁷ The *2011 Australian State of the Environment Report* highlighted that invasive species:

represent one of the most potent, persistent and widespread threats to Australian biodiversity. They have both a direct negative impact on species and communities through losses and extinctions, and an indirect impact on ecosystems and biodiversity through ecological changes brought by those losses and extinctions.¹⁸

The *State of the Environment 2016* report states that invasive species, a major biosecurity issue, 'are increasing in their distribution and abundance.'¹⁹ That report concluded:

The outlook for Australian biodiversity is generally poor, given the current overall poor status, deteriorating trends and increasing pressures. Our current investments in biodiversity management are not keeping pace with the scale and magnitude of current pressures. Resources for managing biodiversity and for limiting the impact of key pressures mostly appear inadequate to arrest the declining status of many species. Biodiversity and broader conservation management will require major reinvestments across long timeframes to reverse deteriorating trends.²⁰

Weeds and tramp ants were the most mentioned examples of continuing environmental biosecurity problems raised in the Senate Committee inquiry process. Interestingly, the threat of weeds for environmental biosecurity was recognised more than a century ago when Hamilton (a prize-winning naturalist) observed that 'the introduction of a new flora' has or will result in the 'modification of the indigenous flora through competition.'²¹ The origin of the tramp ant problem is probably more recent, attributed to trade.²²

¹⁷ Biodiversity Assessment Working Group of the National Land and Water Resources Audit, Department of the Environment, Water, Heritage and the Arts, *Assessment of Australia's Terrestrial Biodiversity 2008* (2009) 150, based on an analysis of documentation on threatened species and communities.

¹⁸ State of the Environment 2011 Committee, Department of Sustainability, Environment, Water, Population and Communities, *Australia: State of the Environment 2011* (2011) 637 ('*2011 Australian State of the Environment Report*').

¹⁹ *State of the Environment 2016*, above n 2, 17–20.

²⁰ *Ibid* vii–viii — 'Executive Summary'.

²¹ A G Hamilton, 'On the Effect Which Settlement in Australia has Produced upon Indigenous Vegetation' (read before the Royal Society of New South Wales, 7 September 1892), reproduced in (1892) 26 *Journal and Proceedings of the Royal Society of NSW* 178.

²² Wet Tropics Management Authority (Qld), *What Are Yellow Crazy Ants?* <<https://www.wettropics.gov.au/yellow-crazy-ants>>; Queensland Government – Department of Agriculture and Fisheries, *Frequently Asked Questions About Fire Ants* (2016) <<https://www.daf.qld.gov.au/plants/weeds-pest-animals-ants/invasive-ants/fire-ants/general-information-about-fire-ants/frequently-asked-questions>>.

Other invasive species also generate environmental biosecurity problems: diseases, fungi and parasites; feral animals; other insects and other invertebrates; and introduced marine pests.²³

Environmental biosecurity is characterised by complexity, uncertainty and divergence and fragmentation in viewpoints, values, and strategic intentions — truly ‘wicked’ problems.²⁴ The complexity in managing environmental biosecurity is clear from the many laws, agencies and practices that contribute directly or indirectly to the success or failure of biosecurity. For example, laws relating to trade, travel, shipping, ports management, aviation, land management, real estate sales, movement of stock, fodder and machinery, pest animal and plant control and management, pollution and waste, health, policing, investment, and defence and security may all have impacts relating to environmental biosecurity. Responsibilities for these are spread across all levels of government. In all situations, the actions of private organisations, businesses and individuals also contribute to success or failure.²⁵

III THE HISTORICAL CONTEXT, SCALE AND BREADTH OF THE SENATE COMMITTEE INQUIRY

The two most recent major reviews of quarantine and biosecurity in Australia — the *Nairn Review*²⁶ and the *Beale Panel*²⁷ — the most comprehensive and significant since the introduction of the *Quarantine Act 1908* (Cth), have provided the foundations for current overall biosecurity management in Australia. Both were concerned primarily with the traditional topics of health and industry protection, but both also mentioned environmental biosecurity. The *Nairn Review* recommended inclusion of the natural environment in quarantine decision making and for Animal Health Australia and Plant Health Australia to include the natural environment when coordinating the development of national contingency plans for major exotic plants and diseases. The *Beale Panel* observed that the existing biosecurity framework did not effectively address risks to the Australian environment.

Environmental biosecurity was prominent, although that term was not used, in Prime Minister Hawke’s introduction of ecologically sustainable development in 1989, when he emphasised increased Commonwealth Government attention to overcoming the negative environmental impacts of introduced plants and animals.²⁸ Despite this early recognition, the first formal inquiry devoted solely to environmental rather than industry biosecurity was not until 2014–2015, by the Senate Environment and Communications References Committee.²⁹

²³ Community Information Unit, Department of the Environment and Energy, above n 15.

²⁴ This simplified definition is based on Brian Heard, ‘Wicked Problems in Water Governance: Paradigm Changes to Promote Water Sustainability and Address Planning Uncertainty’ (Technical Report No 38, Urban Water Research Alliance, 2010).

²⁵ See, eg, Serrated Tussock Working Party for NSW and the ACT, ‘Improving Serrated Tussock Control’ (2012) 5–6 <<http://www.serratedtussock.com.au/?i=88&policy-papers>>; National Biosecurity Committee, Department of Agriculture and Water Resources, *Modernising Australia’s Approach to Managing Established Pests and Diseases of National Significance: Discussion Paper — Summary of Submissions* (2016).

²⁶ M E Nairn et al, Department of Primary Industries and Energy, *Australian Quarantine: A Shared Responsibility* (1996) (‘*Nairn Review*’).

²⁷ Roger Beale et al, Department of Agriculture, Fisheries and Forestry (Cth), *One Biosecurity: A Working Partnership* (2008) (‘*Beale Panel*’).

²⁸ R J L Hawke, *Our Country, Our Future: Statement on the Environment* (Australian Government Publishing Service, 1989) 19.

²⁹ *Senate Environmental Biosecurity Report*, above n 1.

Uncertainties about the effectiveness of environmental biosecurity management had been raised but not fully addressed in other reviews.³⁰

The 2014–2015 inquiry was prompted by dissatisfaction with the processes being followed to develop new Commonwealth biosecurity legislation in 2012–2013. There was a perception the 2008 *Beale Panel* conclusions and other review comments supporting greater attention to environmental biosecurity were being side-lined.³¹ Environmental groups were constantly lobbying for a better response to environmental biosecurity problems. In 2014 the Invasive Species Council,³² which has consistently advocated stronger action on environmental biosecurity, proposed a Senate inquiry into Australia's state of preparedness for new environmental invaders, citing multiple failures and flaws with the prevailing system;³³ high costs arising from these failures and flaws;³⁴ lack of Parliamentary oversight;³⁵ and a bias in past inquiries towards agriculture.³⁶ Responding to these concerns, the Senate referred the specific matter of *environmental* biosecurity to its Environment and Communications References Committee on 26 June 2014, to inquire and report on:

The adequacy of arrangements to prevent the entry and establishment of invasive species likely to harm Australia's natural environment... Australia's state of preparedness for new environmental incursions... and any other related matter³⁷

with an emphasis on recent accidental and illegal incursions and potential new incursions rather than on established pests and diseases.³⁸ In practice, it proved difficult to deal with the

³⁰ See, eg, Senate Environment, Communications, Information Technology and the Arts References Committee, Parliament of Australia, *Turning Back the Tide – The Invasive Species Challenge* (2004); New South Wales, Equine Influenza Inquiry, *Equine Influenza: The August 2007 Outbreak in Australia* (2008); Allan Hawke, 'The Australian Environment Act: Report of the Independent Review of the Environment Protection and Biodiversity Act 1999' (Department of the Environment, Heritage and the Arts, 30 October 2009); Senate Environment and Communications References Committee, Parliament of Australia, *Effectiveness of Threatened Species and Ecological Communities' Protection in Australia* (2013); Senate Rural Affairs and Transport References Committee, Parliament of Australia, *Science Underpinning the Inability to Eradicate the Asian Honeybee* (2011); Senate Rural and Regional Affairs and Transport References Committee, Parliament of Australia, *Australia's Biosecurity and Quarantine Arrangements* (2012); Senate Rural and Regional Affairs and Transport References Committee, Parliament of Australia, *Effect on Australian Pineapple Growers of Importing Fresh Pineapple from Malaysia, Effect on Australian Ginger Growers of Importing Fresh Ginger from Fiji, Proposed Importation of Potatoes from New Zealand* (2014) ('2014 Senate Report on Effect of Importing Pineapple, Ginger and Potatoes'); Senate Rural and Regional Affairs and Transport References Committee, Parliament of Australia, *Future of Beekeeping and Pollination Service Industries in Australia* (2014); Senate Rural and Regional Affairs and Transport Legislation Committee, Parliament of Australia, Biosecurity Bill 2014 [Provisions], Biosecurity (Consequential Amendments and Transitional Provisions) Bill 2015 [Provisions], Quarantine Charges (Imposition–Customs) Amendment Bill 2014 [Provisions], Quarantine Charges (Imposition–Excise) Amendment Bill 2014 [Provisions], Quarantine Charges (Imposition–General) Amendment Bill 2014 [Provisions] (2015).

³¹ See the submissions to the Senate Committee inquiring into the Biosecurity Bill 2012, which lapsed on dissolution of Parliament for the 2013 election, at <http://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Rural_and_Regional_Affairs_and_Transport/Biosecurity2012/Submissions>, in particular from AUSVEG, Australasian Plant Pathology Society, Dr Sophie Riley, Leila Huebner, Invasive Species Council and several Tasmanian government and industry interests.

³² See Invasive Species Council, (2018) <<http://invasives.org.au>> for details about the Council and its activities.

³³ Invasive Species Council, Proposal for an Inquiry into Australia's Preparedness for New Environmental Invaders (25 May 2014) 1, 3.

³⁴ *Ibid* 2.

³⁵ *Ibid* 3.

³⁶ *Ibid*.

³⁷ Commonwealth, *Journals of the Senate*, No 37, 26 June 2014, 1020.

terms of reference without recourse to history and attention also to established pests and diseases.

The Committee made a concerted effort to seek information and views from the public, resulting in 92 submissions, seven additional information items, six tabled documents and five answers to questions on notice. The submissions were from private individuals, researchers, landcare groups and related bodies, environmental and industry organisations, government bodies, professional groups and a public service union.³⁹

Several environmental biosecurity problems were frequently raised in submissions: the inadequate level of government investment;⁴⁰ the extent to which past and current institutional arrangements ensure that environmental biosecurity lags behind agricultural biosecurity;⁴¹ continuing quarantine failures;⁴² confusion or uncertainty about responsibility and accountability across levels of government and different agencies;⁴³ the costs of the impacts of invasive species;⁴⁴ the benefits of early detection and action;⁴⁵ marine problems

³⁸ *Senate Environmental Biosecurity Report*, above n 1, 1–2.

³⁹ See lists in the *Senate Environmental Biosecurity Report*, above n 1, 155–8.

⁴⁰ See, eg, Shipping Australia Ltd, Submission No 9 to Senate Environment and Communications References Committee, Parliament of Australia, *Inquiry into Environmental Biosecurity*, 5 August 2014; Nature Conservation Society of South Australia, Submission No 33 to Senate Environment and Communications References Committee, Parliament of Australia, *Inquiry into Environmental Biosecurity*, 11 August 2014; Community and Public Sector Union, Submission No 72 to Senate Environment and Communications References Committee, Parliament of Australia, *Inquiry into Environmental Biosecurity*, 13 August 2014; Dr Kirsti Abbott, Submission No 77 to Senate Environment and Communications References Committee, Parliament of Australia, *Inquiry into Environmental Biosecurity*, 3 September 2014.

⁴¹ See, eg, North East Tasmania Land Trust Inc, Submission No 5 to Senate Environment and Communications References Committee, Parliament of Australia, *Inquiry into Environmental Biosecurity*, 31 July 2014; Anglesea, Aireys Inlet Society for the Protection of Flora and Fauna, Submission No 62 to Senate Environment and Communications References Committee, Parliament of Australia, *Inquiry into Environmental Biosecurity*, 19 August 2014; Doug Laing, Submission No 63 to Senate Environment and Communications References Committee, Parliament of Australia, *Inquiry into Environmental Biosecurity*, 2014.

⁴² See, eg, Northern Inland Council for the Environment, Submission No 3 to Senate Environment and Communications References Committee, Parliament of Australia, *Inquiry into Environmental Biosecurity*, 25 July 2014; Australian Museum Research Institute, Submission No 36 to Senate Environment and Communications References Committee, Parliament of Australia, *Inquiry into Environmental Biosecurity*, 12 August 2014; Dr Andrew Peters, Submission No 65 to Senate Environment and Communications References Committee, Parliament of Australia, *Inquiry into Environmental Biosecurity*, 2014.

⁴³ See, eg, Andrew Triggs, Submission No 2 to Senate Environment and Communications References Committee, Parliament of Australia, *Inquiry into Environmental Biosecurity*, 24 July 2014; Aliemi Pty Ltd, Submission No 24 to Senate Environment and Communications References Committee, Parliament of Australia, *Inquiry into Environmental Biosecurity*, 12 August 2014; Nursery & Garden Industry Australia, Submission No 55 to Senate Environment and Communications References Committee, Parliament of Australia, *Inquiry into Environmental Biosecurity*, August 2014.

⁴⁴ See, eg, Dr Andrew Hingston, Submission No 6 to Senate Environment and Communications References Committee, Parliament of Australia, *Inquiry into Environmental Biosecurity*, 31 July 2014; Pamela Lloyd, Submission No 15 to Senate Environment and Communications References Committee, Parliament of Australia, *Inquiry into Environmental Biosecurity*, 2014; Farm Tree & Landcare Association, Submission No 44 to Senate Environment and Communications References Committee, Parliament of Australia, *Inquiry into Environmental Biosecurity*, 2014.

⁴⁵ See, eg, Leila W Huebner (Nelson Coastcare project co-ordinator), Submission No 10 to Senate Environment and Communications References Committee, Parliament of Australia, *Inquiry into Environmental Biosecurity*, 2014; Name withheld, Submission No 68 to Senate Environment and Communications References Committee, Parliament of Australia, *Inquiry into Environmental Biosecurity*, 2014; Christmas Island Crazy Ant Scientific Advisory Committee, Submission No 78 to Senate Environment and Communications References Committee, Parliament of Australia, *Inquiry into Environmental Biosecurity*, September 2014.

from shipping;⁴⁶ the need to recognise and respect the regional differences within Australia;⁴⁷ the particular problems of islands;⁴⁸ and the problems caused by the garden nursery and plant and aquarium industries.⁴⁹

Twenty-nine organisations and some individuals appeared at the Committee's four sets of public hearings. Most witnesses were from public agencies or similar. Others were from industry groups and environmental advocacy groups.⁵⁰ Not surprisingly, all the submissions and evidence supported the aim of reducing impacts from invasive pests and diseases.⁵¹ Overall the most common themes were about the quality and effectiveness of existing arrangements, and whether there were avenues for improvement.

IV THE OUTCOMES OF THE 2014–15 COMMITTEE INQUIRY AND THE GOVERNMENT'S RESPONSE

When presenting the Committee's report, the *Senate Environmental Biosecurity Report*, to the Senate on 13 May 2015 the Chair of the Committee, Senator Anne Urquhart, accepted there was still a long way to go to achieve real progress with environmental biosecurity:⁵²

Biosecurity in Australia is facing a number of challenges, not least of which is the increasing cross-border movements of people, cargo and mail.

All of these pathways present a risk that an environmental or agricultural pest could breach our borders.

⁴⁶ See, eg, Tasmanian Salmonid Growers Association Ltd, Submission No 21 to Senate Environment and Communications References Committee, Parliament of Australia, *Inquiry into Environmental Biosecurity*, 11 August 2014; Ports Australia, Submission No 42 to Senate Environment and Communications References Committee, Parliament of Australia, *Inquiry into Environmental Biosecurity*, 14 August 2014; CSIRO, Submission No 48 to Senate Environment and Communications References Committee, Parliament of Australia, *Inquiry into Environmental Biosecurity*, August 2014.

⁴⁷ See, eg, Torres Strait Regional Authority, Submission No 52 to Senate Environment and Communications References Committee, Parliament of Australia, *Inquiry into Environmental Biosecurity*, 8 August 2014; National Farmers' Federation, Submission No 69 to Senate Environment and Communications References Committee, Parliament of Australia, *Inquiry into Environmental Biosecurity*, 22 August 2014; Dr Bruce Wilson, Submission No 84 to Senate Environment and Communications References Committee, Parliament of Australia, *Inquiry into Environmental Biosecurity*, 13 August 2014.

⁴⁸ See, eg, Dr Andrew Burbidge and Professor John Woinarski, Submission No 60 to Senate Environment and Communications References Committee, Parliament of Australia, *Inquiry into Environmental Biosecurity*, 2014; The Environment Association (TEA) Inc, Submission No 64 to Senate Environment and Communications References Committee, Parliament of Australia, *Inquiry into Environmental Biosecurity*, 22 August 2014; Government of South Australia, Submission No 86 to Senate Environment and Communications References Committee, Parliament of Australia, *Inquiry into Environmental Biosecurity*, September 2014.

⁴⁹ See, eg, Professor David Guest, Submission No 43 to Senate Environment and Communications References Committee, Parliament of Australia, *Inquiry into Environmental Biosecurity*, 12 August 2014; Victorian National Parks Association, Submission No 66 to Senate Environment and Communications References Committee, Parliament of Australia, *Inquiry into Environmental Biosecurity*, 22 August 2014; NSW Natural Resources Commission, Submission No 70 to Senate Environment and Communications References Committee, Parliament of Australia, *Inquiry into Environmental Biosecurity*, 22 August 2014.

⁵⁰ A full list of witnesses is available in the *Senate Environmental Biosecurity Report*, above n 1, 159.

⁵¹ There is one qualification to this conclusion. Shipping Australia Ltd argued against adding any uniquely Australian measures to international requirements. Shipping Australia Ltd (Submission No 9), above n 40, Australian Shipping Ltd, which is a peak shipowner association.

⁵² Commonwealth, *Parliamentary Debates*, Senate, 13 May 2015, 3042 (Anne Urquhart).

At the same time, climate change is changing the geographic range that invasive species can thrive in.

And of course staff cuts at government agencies and reduction in research funding are also hitting hard.

Environmental biosecurity faces extra challenges because it does not have the same range of stakeholders to contribute financially to biosecurity efforts as industry biosecurity does.

It also faces greater difficulties in detection, and, because it functions across a much broader range of species and ecosystems, the task becomes even more complex.⁵³

The Committee's substantial 161-page report ranged over many issues including: Commonwealth, state and territory arrangements; Commonwealth administration; resources; research and enforcement. The *Senate Environmental Biosecurity Report* confirmed there was a spectrum of effort and achievements, from improvements already underway to issues of continuing concern. For example, ballast water management was being acted on, consistent with implementation of international agreements,⁵⁴ while the position with weeds continued to worsen.⁵⁵ The Committee also accepted that invasive species was one of the two key threats to Australia's biodiversity (the other being habitat destruction), citing *2011 Australian State of the Environment Report* in support of this.⁵⁶

The *Senate Environmental Biosecurity Report* acknowledged some broader systemic problems: the inevitability of limited resources;⁵⁷ acceptance of the institutional status quo;⁵⁸ and acceptance of the trade domination of the biosecurity system.⁵⁹ It failed, however, to offer any new insights on how to tackle these fundamental problems. The Committee relied instead on a majority of recommendations about day-to-day operational effectiveness to make a difference.⁶⁰ The *Senate Environmental Biosecurity Report's* twenty-six agreed recommendations ranged from very specific issues such as ship biofouling (Recommendation 23) to others that were quite generally expressed, for example, in relation to the application of the precautionary principle when assessing the feasibility of eradication (Recommendation 3), while others simply sought further review activity (for example, Recommendation 19 about regulations for private aviculture imports).⁶¹

The Commonwealth Government released a response to the *Senate Environmental Biosecurity Report* on 28 June 2017. Its general conclusion was:

The Australian Government supports, or supports in principle, the majority of the Committee's recommendations, and agrees that some aspects of the management of

⁵³ Ibid.

⁵⁴ See the positive references to improved ballast water management in the *Senate Environmental Biosecurity Report*, above n 1, 110–2.

⁵⁵ See, eg, the evidence recorded by the Senate Committee in the *Senate Environmental Biosecurity Report*, above n 1, 47.

⁵⁶ Ibid 5; *2011 Australian State of the Environment Report*, above n 18, 617.

⁵⁷ *Senate Environmental Biosecurity Report*, above n 1, 104.

⁵⁸ Ibid 133.

⁵⁹ Ibid 6.

⁶⁰ Ibid 133.

⁶¹ The agreed recommendations are listed in the *Senate Environmental Biosecurity Report*, above n 1, vii.

environmental biosecurity pose unique difficulties. The Australian Government considers the most effective approach to addressing these unique difficulties is to continue to strengthen the existing biosecurity system, which is designed to manage biosecurity risks to all sectors.⁶²

The Government did not support some of the recommendations:

- Recommendation 2, to remove the need for consensus for response action under the National Environmental Biosecurity Response Agreement (NEBRA);⁶³
- Recommendation 3, to include explicit reference to the precautionary principle in NEBRA;
- Recommendations 1–6 in Australian Greens Minority report, to establish a new body, Environment Health Australia; and
- Recommendation 7 in the Australian Greens Minority report, to establish a separate Biosecurity Agency.

The Committee's *Senate Environmental Biosecurity Report* and the Government's response to it indicate a shared view of how to deal with environmental biosecurity issues: effectively, 'business as usual.' Unfortunately, this 'business as usual' approach ignores or discounts several significant constraints that hamper effective biosecurity management. Many of these constraints arise from legacies of the past — the historical association of biosecurity with quarantine, human health and industry concerns. Recently, there has also been unhelpful government action, including budget reductions and a retreat from research activities supporting environmental biosecurity issues. There is continuing preference for trade over consideration of environmental impacts, despite obligations for ecologically sustainable development that have been accepted by governments. Market failure issues arise (where the negative effects for those who are not a party to a transaction are not addressed), as there are inadequate mechanisms for dealing with externalities generated by biosecurity problems. Institutional arrangements have kept biosecurity management under the control of health and agriculture interests. There are further emerging problems as a result of global changes to biodiversity, climate, oceans, land forms, hydrology and from pollution effects. All of these issues were raised in the Committee proceedings but not dealt with effectively by the Committee or subsequently by Commonwealth Governments. The following sections of this article deal with these significant constraints and identify where further action is needed if environmental biosecurity outcomes are to be improved.

⁶² Australian Government, *Australian Government Response to the Environment and Communications References Committee Report: Environmental Biosecurity* (June 2017) 2 ('*Australian Government Response to the Senate Environmental Biosecurity Report*').

⁶³ NEBRA establishes the national arrangements for responding to significant pest and disease incursions where there are predominantly public benefits. See Australian Government Department of Agriculture and Water Resources, *National Environmental Biosecurity Response Agreement (NEBRA) Review* (22 August 2017) <<http://www.agriculture.gov.au/biosecurity/emergency/nebra>>. For more about NEBRA, see 4.2 below.

V ADDRESSING THE SIGNIFICANT CONSTRAINTS

In this section I describe continuing significant constraints and challenges affecting environmental biosecurity. I analyse how the Senate Committee dealt with (or failed to deal with) them and assess the value of subsequent developments affecting environmental biosecurity outcomes.

A *Historic Advantages for Health and Industry*

Australia's biosecurity systems evolved from health quarantine and agricultural pest and disease management starting in the earliest days of European settlement. Consistent with this history, quarantine and then biosecurity administration has been entrusted to health and agriculture agencies. Since 1984 Commonwealth Agriculture Ministers and their departments have been responsible for administration of quarantine and biosecurity, with Health retaining responsibilities for human health issues. The continuing priority for industry is evident from the emphasis in the Minister's Second Reading speech for the Biosecurity Bill 2014 (Cth) on marketing, trade and agriculture issues.⁶⁴ The inevitable outcome of this history is that health and industry concerns can be expected to continue to take priority over environmental biosecurity.

The Senate Committee noted that in 2008 the *Beale Panel* had indicated that:

In the past, the environment — terrestrial and aquatic — has received less priority than agriculture...a more significant effort is needed in these two areas in the future...⁶⁵

Submissions to the Senate inquiry pointed out that environmental biosecurity lags behind health and industry biosecurity.⁶⁶ The Committee accepted that evidence⁶⁷ and noted that one cause was 'the historical emphasis on industry biosecurity.'⁶⁸ It also acknowledged submitters' views that agricultural biosecurity is far better resourced than environmental biosecurity because of the readily identifiable economic impacts of agricultural biosecurity threats.⁶⁹

The Committee acknowledged that the position with invasive pest problems was worsening, thereby inferentially accepting the historic lag was still a problem. For example, the Committee concluded:

incursions by pests and diseases that pose a threat to the environment have occurred regularly in recent years. Plant pests and diseases and weeds appear to make up the majority of detected incursions.⁷⁰

⁶⁴ Commonwealth, *Parliamentary Debates*, House of Representatives, 27 November 2014, 13425 (Barnaby Joyce, Minister for Agriculture).

⁶⁵ *Senate Environmental Biosecurity Report*, above n 1, 29, referring to the *Beale Panel*, above n 27, xxiii.

⁶⁶ See, eg, Richard Stocklosa, Submission No 53 to Senate Environment and Communications References Committee, Parliament of Australia, *Inquiry into Environmental Biosecurity*, 22 August 2014, 2 who has been involved in development of the successful Barrow Island Quarantine Management System; CSIRO (Submission No 48), above n 46, 13.

⁶⁷ *Senate Environmental Biosecurity Report*, above n 1, 133.

⁶⁸ *Ibid* 43.

⁶⁹ *Ibid* 29.

⁷⁰ *Ibid* 71.

Despite acknowledging the historic lag problem, the Committee failed to make strong recommendations addressing the problem. The Committee's acceptance of the inevitability of limited resources⁷¹ and the institutional status quo⁷² forestalled any opportunity to make recommendations that could effectively and quickly overcome the historic priority for health and industry.

Marginal gains in reversing the historic disadvantage for environmental biosecurity could be made from some of the Committee's recommendations. For example, the Committee recognised that, unlike similar agreements for animal disease and plant pests, there is a lack of clear arrangements for decision making and cost sharing after a decision that eradication of a biosecurity threat is no longer possible.⁷³ The Committee recommended (Recommendation 5) that the Commonwealth, state and territory governments work towards a transition to management framework (when it is decided that eradication is no longer possible) to improve the situation.⁷⁴ Any process that avoids delays in making effective transition to management arrangements can be expected to improve the relevant element of biosecurity. In this case, environmental biosecurity would be starting to catch up with that for health and industry.

Nevertheless, the overall outcome of the Committee processes on the lag question is that it accepted that there is a lag, heard evidence that it continues, but failed to make recommendations that would fundamentally change the position. It could, for example, have urged greater investment in environmental inputs into biosecurity management, a more direct role for environmental agencies and introduction of environmental impact assessment for biosecurity decisions that could affect environmental biosecurity. The Government response so far has not changed this position.

B *Dealing with Emergencies – Inevitable Priority for Industry and Human Health Problems*

The natural tendency to give high priority to dealing with major biosecurity events that could have a significant effect on human or domestic animal or plant health, or on industry profits, compounds the historic lag problem. An environmental biosecurity problem will generally not be the highest priority, or, even if it is given high priority, resources available to it will be limited or unavailable. The handling of myrtle rust, a disease affecting eucalyptus and other Australian plants caused by a fungus from South America, was accepted by the Committee as one example of this kind of problem in operation.⁷⁵

The Committee's terms of reference required attention to the situation for high priority environmental risks. The need for improvement was illustrated by the Plant Biosecurity Cooperative Research Centre's assertion that 'speed is fundamental when addressing any

⁷¹ Ibid 104.

⁷² Ibid 133.

⁷³ Ibid 136.

⁷⁴ Ibid. Transition to management after it has been decided that eradication is no longer possible involves the activities to adapt to and minimise the impact of an invasive species.

⁷⁵ Ibid 71.

environmental biosecurity threat — either eradication or containment.’⁷⁶ The New South Wales Office of Heritage and Environment submitted that:

While such measures [good surveillance and rapid response capability] are relatively well developed for biosecurity threats to primary industries and health, they are less well developed for threats to the natural environment.⁷⁷

The existence of funded response plans for industry problems and the availability of stakeholders and resources for those problems were also noted.⁷⁸ This contrasted with the lack of any equivalent arrangements dedicated to the natural environment. The National Environmental Biosecurity Response Agreement (NEBRA) was established in 2012 to

address the gaps which existed in relation to responses to pests and diseases with primarily environmental and social amenity impacts, for example weeds and marine pests.⁷⁹

Submissions identified continuing flaws with NEBRA such as: lack of dedicated resources; lack of engagement of environmental and community sectors; often limited involvement of ecological experts; concentration of decision making in agriculture agencies; and absence of a national fund supporting the Agreement.⁸⁰

The Committee therefore was conscious of the existence of funded programs for quick responses and emergency action for industry, and of the absence of the equivalent for the natural environment. It had evidence of the contributing factors, such as the historical development of biosecurity, its management primarily by agricultural interests, the lack of experience with NEBRA and the under resourcing of environmental agencies.

Some of the Committee’s recommendations could make marginal differences to the current unsatisfactory situation. These include: removing the capacity of a single party to veto action under NEBRA (Recommendation 2); including a specific reference to the precautionary principle in NEBRA (Recommendation 3); improving cost benefit analyses (Recommendation 4); and speeding up processes for funding programs for time-sensitive projects (Recommendation 8).⁸¹ As indicated in section four above, the first two of these were rejected by the Commonwealth Government. The Committee acknowledged the difficulties in translating environmental values into economic terms,⁸² and so attempts to implement Recommendation 4 (incorporating environmental impacts into cost-benefit analyses) may also not be successful.

⁷⁶ Plant Biosecurity Cooperative Research Centre, Submission No 32 to Senate Environment and Communications References Committee, Parliament of Australia, *Inquiry into Environmental Biosecurity*, 12 August 2014, 7.

⁷⁷ NSW Office of Environment and Heritage, Submission No 82 to Senate Environment and Communications References Committee, Parliament of Australia, *Inquiry into Environmental Biosecurity*, 2014, 2.

⁷⁸ *Senate Environmental Biosecurity Report*, above n 1, 29-31.

⁷⁹ Department of Agriculture and Department of the Environment, Submission No 59 to Senate Environment and Communications References Committee, Parliament of Australia, *Inquiry into Environmental Biosecurity*, August 2014, 34.

⁸⁰ Invasive Species Council, Submission No 74 to Senate Environment and Communications References Committee, Parliament of Australia, *Inquiry into Environmental Biosecurity*, September 2014, 46-8.

⁸¹ *Senate Environmental Biosecurity Report*, above n 1, 135-8.

⁸² *Ibid* 136.

On the basis of evidence before the Committee, increased funding would be needed to implement its recommendations, but the Committee remained silent on that point even though its terms of reference included attention to the adequacy of response arrangements. Funding is obviously an adequacy factor, and so was also covered by the Senate Committee's terms of reference.

In summary, the Committee made recommendations that would make only limited improvement to Australia's capacity to deal more effectively with high risk and emergency environmental biosecurity situations. The Government rejected two of them — Recommendation 2 regarding NEBRA processes and Recommendation 3 regarding the precautionary principle.

The Committee accepted evidence that processes under the National Landcare Program (a nationwide effort to address environmental problems, including the introduction of pest weeds and animals)⁸³ delayed timely interventions.⁸⁴ The 2017 *National Landcare Program Review Report*⁸⁵ does not directly address the aspect of invasive species management referred to in Recommendation 8 (review of funding arrangements for time sensitive situations).

A review of NEBRA has been undertaken since the *Senate Environmental Biosecurity Report*.⁸⁶ The review recommendations are to be considered by the National Biosecurity Committee in concert with the recommendations of the *Review of the Intergovernmental Agreement on Biosecurity*.⁸⁷ The Commonwealth Government is expected to respond to these reports by mid-2018.⁸⁸

Recommendations in the *Review of the National Environmental Biosecurity Response Agreement* included a stronger role for environment agencies in NEBRA decision making, inclusion of a transition to management phase where eradication is no longer considered possible, and simplification of benefit-cost analysis processes.⁸⁹ Implementation of these recommendations would lead to some amelioration of the problems identified in the Senate Committee processes, and some advance on the Senate Committee recommendations.

C *Government Investment in Environmental Biosecurity and in Related Research*

The Senate Committee accepted that biosecurity outcomes were constrained by limited resources. About a third of the submissions to the inquiry raised funding issues. The Department of the Environment mentioned the 'limited capability and resources allocated [to it] for implementation of threat abatement plans'.⁹⁰ Other witnesses referred to the problem of inadequate agency resources, for example, CSIRO:

⁸³ *National Landcare Program Review Report*, above n 12; Australian Government — National Landcare Program, *National Landcare Program Phase 2* <<http://www.nrm.gov.au/national-landcare-program>>.

⁸⁴ *Senate Environmental Biosecurity Report*, above n 1, 69.

⁸⁵ *National Landcare Program Review Report*, above n 12.

⁸⁶ *Review of the National Environmental Biosecurity Response Agreement*, above n 11.

⁸⁷ *Review of the Intergovernmental Agreement on Biosecurity*, above n 10; *Review of the National Environmental Biosecurity Response Agreement*, above n 11

⁸⁸ Personal advice from the Department of Agriculture and Water Resources in February 2018.

⁸⁹ *Review of the National Environmental Biosecurity Response Agreement*, above n 11, 5–6.

⁹⁰ *Senate Environmental Biosecurity Report*, above n 1, 94.

Government departments and agencies responsible for the environment are struggling with reduced capacity to take full responsibility in decision-making and responses to new incursions that affect the environment.⁹¹

The Committee acknowledged CSIRO's concerns that overall funding for biosecurity is too low,⁹² as mentioned in its report about future biosecurity issues.⁹³ A major risk identified in the *2014 CSIRO Report* is the risk of future disinvestment by governments in biosecurity management, including for responding to pest or disease outbreaks.⁹⁴

The Committee expressed concern that 'large reductions in staff numbers [in the Agriculture Department] will lead, at some point, to a reduction in capability.'⁹⁵ The Committee reported that it had received evidence:

that suggests the effective operation of Australia's risk-based biosecurity system is threatened by a lack of resources, both within the Department of Agriculture and the Department of the Environment, and within the scientific bodies active in the Biosecurity area, such as the CSIRO, the Plant Biosecurity CRC, the Invasive Animals CRC and Australia's natural history museums.⁹⁶

The Committee therefore was clearly of the view that the funding problem is significant and widespread. Nevertheless, the only Committee recommendation suggesting the possibility of increased budget resources was for a review of the Northern Australia Quarantine Strategy with specific attention to the adequacy of resources available for its implementation (Recommendation 10).⁹⁷

The Committee also recognised problems with research underpinning biosecurity, particularly environmental biosecurity. These problems included: lack of research funding; the way research funding is delivered, for example, in grants programs; a decline in capability, with many skilled people retiring and not being replaced; and new research issues arising from climate change and other global changes (such as changes in range of pest species, the development of novel ecosystems, and changing risk and threat patterns).⁹⁸

The Committee had evidence of research needs for biosecurity management, involving expertise from zoology, botany, molecular biology, microbiology, entomology, geospatial analysis, food and nutrition science, quantitative science, environmental science, plant pathology, ecology, aquatic animal health and veterinary science,⁹⁹ law, institutional issues and behavioural science.¹⁰⁰

⁹¹ Ibid 31.

⁹² Ibid 98.

⁹³ Meredith Simpson and Vivek Srinivasan, 'Australia's Biosecurity Future: Preparing for Future Biological Challenges' (Report, CSIRO, 2014) ('*2014 CSIRO Report*').

⁹⁴ Ibid 63, 65.

⁹⁵ *Senate Environmental Biosecurity Report*, above n 1, 138.

⁹⁶ Ibid 104.

⁹⁷ Ibid 139.

⁹⁸ Ibid 140.

⁹⁹ Department of Agriculture and Department of the Environment (Submission No 59), above n 79, 2.

¹⁰⁰ The Australian Centre for Agriculture and Law — University of New England, Submission No 16 to Senate Environment and Communications References Committee, Parliament of Australia, *Inquiry into Environmental Biosecurity*, 9 August 2014, 2, 4.

In response to these issues, the Committee recommended that the Commonwealth should - develop a strategy to overcome the declining level of expertise (Recommendation 12); review and prioritise research needs (including about climate change) and determine what institutional structure will best address the research needs (Recommendation 13) and work with the states and territories to establish a coordinated taxonomic service (Recommendation 14).¹⁰¹

The Committee's recommendations do not suggest additional investment by government, and therefore, even if adopted, the recommendations would not recover the losses from the retreat from research in recent years,¹⁰² or provide a platform for the needed great leap forward seen by well-informed interested parties such as CSIRO.

The Committee recommendations therefore did not put pressure on government decision makers to increase government investment in biosecurity. The 2017 *Review of the Intergovernmental Agreement on Biosecurity*, however, explicitly recognised the funding problems besetting biosecurity, specifically mentioning environmental biosecurity.¹⁰³ The review recommends container levies, increased passenger movement charges, expansion of land-based levies and a universal, *ex ante* emergency response mechanism.¹⁰⁴

D *Preference for Trade over the Environment*

Australian jurisdictions have accepted that trade *and* environmental obligations apply to biosecurity management.¹⁰⁵ The Senate Committee pointed out that in practice priority is given to the trade obligations: 'Australia's response to biosecurity issues is based on the requirements of the World Trade Organization *SPS Agreement*¹⁰⁶.'¹⁰⁷ As Daniel Simberloff, internationally renowned expert on invasive species, observed at an Australasian weeds conference:

The biggest hindrance to even more effective prevention [of the introduction of invasive species] is multi-lateral trade treaties such as those of the World Trade Organization, which reflexively argues against measures that would impede invasions and hinders the adoption of more stringent actions by individual signatory nations.¹⁰⁸

Australia's deference to the *SPS Agreement* over environmental obligations seriously impedes environmental biosecurity management at the national level. For example, the World Trade Organization regime requires precaution to be abandoned in favour of trade

¹⁰¹ *Senate Environmental Biosecurity Report*, above n 1, 140, 141.

¹⁰² See, eg, cessation of funding for the Cooperative Research Centre for Australian Weed Management in 2008 and of the Rural Industries Research and Development Corporation Weeds Research Program in 2012.

¹⁰³ *Review of the Intergovernmental Agreement on Biosecurity*, above n 10, 114–31.

¹⁰⁴ *Ibid* 131.

¹⁰⁵ See, eg, s 3 of the 2012 Intergovernmental Agreement on Biosecurity which provides that, 'the goal of a national biosecurity system is to minimise the impact of pests and diseases on Australia's economy, environment and the community.' <<https://www.coag.gov.au/content/intergovernmental-agreement-biosecurity>>.

¹⁰⁶ *Marrakesh Agreement Establishing the World Trade Organization*, opened for signature 15 April 1994, 1867 UNTS 3 (entered into force 1 January 1995) annex 1A ('*Agreement on the Application of Sanitary and Phytosanitary Measures*') ('*SPS Agreement*').

¹⁰⁷ *Senate Environmental Biosecurity Report*, above n 1, 6.

¹⁰⁸ Daniel Simberloff, 'CAWS Oration: Plant the White Flag or Raise the Battle Standard? Controversies Over Non-Native Weeds' (Speech delivered at the Nineteenth Australasian Weeds Conference, Hobart, Tasmania, 1 September 2014) 2 <<http://caws.org.au/awc/2014/awc201410011.pdf>>.

unless scientific certainty prevails. This approach to international trade has been described as follows:

In certain respects it suggests a way of thinking more akin to pre-Reformation thinking from the Middle Ages; the implication is that the extent or limits of scientific knowledge mark the boundaries of risk. Presumably under WTO law there is no risk in ignorance.¹⁰⁹

In Australia, Mumford stated in 2000 at a workshop organised by Biosecurity Australia:

International agreements require countries to undertake trade without unnecessary restriction. Therefore, a purely precautionary approach is inappropriate, and it has been discarded in the World Trade Organization (WTO) Sanitary and Phytosanitary (SPS) Agreement for anything other than a temporary measure.¹¹⁰

The Committee quoted Professor David Guest's submission which pointed out that under World Trade Organization rules, 'science based' means that only published scientific evidence can be used in risk analysis.¹¹¹ The result is that no evidence at all is taken as evidence of no problem, a different approach from that in medicine and engineering where precaution would be invoked.¹¹² It also means favouring ephemeral, short term wants over long term societal wellbeing and environmental needs.

Trade and associated issues such as travel and transport featured regularly in submissions to the inquiry¹¹³ and in the *Senate Environmental Biosecurity Report*.¹¹⁴ This is not surprising, given that the government and others see the biosecurity system as an important instrument for trade facilitation. The joint submission from the Departments of Agriculture and the Environment emphasised the trade significance: 'Managing biosecurity is critical to sustaining a productive agriculture sector...and maintaining export markets', and 'Australia's biosecurity system supports our reputation as a safe and reliable trading nation.'¹¹⁵

On the other hand, trade and travel are acknowledged as major generators of biosecurity problems,¹¹⁶ and many of the legacy and newer biosecurity concerns, for example, weeds and ants, arose from trading activities.¹¹⁷ There are still gaps in linking trade and travel risk

¹⁰⁹ Andrew Field, 'Catching the Tasmanian Salmon Laws: How a Decade of Changing World Trade Law Has Tackled Environmental Protection' (2000) 19 *University of Tasmania Law Review* 237, 276.

¹¹⁰ John D Mumford, 'Environmental Risk Evaluation in Quarantine Decision Making' in Kym Anderson, Cheryl McRae and David Wilson (eds), *The Economics of Quarantine and the SPS Agreement* (University of Adelaide Press, republication, 2012) 353, 354.

¹¹¹ *Senate Environmental Biosecurity Report*, above n 1, 96.

¹¹² Professor David Guest (Submission No 43), above n 49, 2. The Australasian Veterinary Poultry Association Committee on Exotic Disease and Importation, Submission No 51 to Senate Environment and Communications References Committee, Parliament of Australia, *Inquiry into Environmental Biosecurity*, 2014, 3, raised the problem of no clinical disease being reported as evidence that there was no disease, rather than treating it as lack of evidence and then applying a cautious approach.

¹¹³ About one third of the submissions directly raised trade related issues, while other submissions dealt with problems that had arisen from trade.

¹¹⁴ See, eg, the Committee conclusion that one difficulty for environmental biosecurity is the 'increasing cross-border movements of people, cargo and mail' in *Senate Environmental Biosecurity Report*, above n 1, 131.

¹¹⁵ Department of Agriculture and Department of the Environment (Submission No 59), above n 79, 1.

¹¹⁶ *2014 CSIRO Report*, above n 93, 30–6.

¹¹⁷ See, eg, Wet Tropics Management Authority, Submission No 51 to Senate Environment and Communications References Committee, Parliament of Australia, *Inquiry into Environmental Biosecurity*, 12

creators with accountability for dealing with the problems that may be caused by their activities.¹¹⁸ For example, importers of plants must meet border biosecurity requirements, but may not be accountable if the plant later leads to a weed problem.¹¹⁹

The Committee therefore had ample evidence indicating that the Australian practice of giving greatest weight to trade considerations in environmental biosecurity decision making is itself a generator of biosecurity problems. The Committee did refer to environmental obligations as part of the legal framework for biosecurity, for example, stating that the *1992 Convention on Biological Diversity*¹²⁰ is also relevant.¹²¹ That Convention requires that the parties shall ‘as far as possible and as appropriate, prevent the introduction of, control or eradicate those alien species which threaten ecosystems, habitats or species.’¹²² The *Biosecurity Act 2015* (Cth), the draft of which was under consideration while the Committee proceedings were still underway, includes an object to give effect to Australia’s international rights and obligations, including under the *1992 Convention on Biological Biodiversity*.¹²³

The Committee also included the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) as part of the legal framework for biosecurity. One of its objects is to promote ecologically sustainable development,¹²⁴ which includes application of the precautionary principle:

if 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.¹²⁵

The Committee referred to the precautionary principle in its Recommendation 3 in the post-border management context. In this specific context, it linked application of the principle with decision making involving biosecurity risks for which eradication may not be feasible. The Committee recommended that NEBRA parties work towards including an explicit precautionary principle so that a lack of full scientific or technical certainty regarding the feasibility of eradication must be weighed against potential biosecurity risks when determining whether to make a response.¹²⁶ It did not, however, refer to the principle in the context of import decisions.

The Committee’s failure to highlight the conflict between trade and environmental obligations and to offer any realistic means of incorporating existing environmental and

August 2014, 5; Associate Professor Don Driscoll, Submission No 46 to Senate Environment and Communications References Committee, Parliament of Australia, *Inquiry into Environmental Biosecurity*, 2014, 1; Australian Network for Plant Conservation Inc, Submission No 49 to Senate Environment and Communications References Committee, Parliament of Australia, *Inquiry into Environmental Biosecurity*, 22 August 2014, 3.

¹¹⁸ The Australian Centre for Agriculture and Law — University of New England (Submission No 16), above n 100, 3.

¹¹⁹ Paul Martin et al, Rural Industries Research and Development Corporation, *Innovations in Institutions to Improve Weed Funding, Strategy and Outcomes* (2012) 12–3.

¹²⁰ *Convention on Biological Diversity*, opened for signature 5 June 1992, 1760 UNTS 79 (entered into force 29 December 1993) (‘1992 Convention on Biological Diversity’).

¹²¹ *Senate Environmental Biosecurity Report*, above n 1, 6.

¹²² *1992 Convention on Biological Diversity* art 8(h).

¹²³ *Biosecurity Act 2015* (Cth) s 4.

¹²⁴ *Environment Protection and Biodiversity Conservation Act 1999* (Cth) s 3.

¹²⁵ *Ibid* s 3A(b).

¹²⁶ *Senate Environmental Biosecurity Report*, above n 1, 135.

precautionary obligations into Australian biosecurity administration involves acceptance of the status quo of trade rules dominating environmental considerations. This is notwithstanding the overwhelming evidence that the WTO trade rules facilitate the increase of environmental biosecurity problems.¹²⁷ The Australian position remains firm commitment to the WTO trade rules, even while acknowledging that major environmental biosecurity problems such as the current imported tramp ants problems are a consequence of those rules. Compounding the problem, the Government budget statements still indicate that investment in biosecurity is primarily for industry: ‘to maintain overseas markets and protect the economy [and] the implementation of emergency response arrangements for Australian agricultural, food and fibre industries.’¹²⁸

E *Market Failure*

The *Senate Environmental Biosecurity Report* included many examples of market failure (where the negative effects for those who are not a party to a transaction are not addressed). The significance of market failure for biosecurity has been reinforced by Productivity Commission observations:

Biosecurity has both public good properties and spill-over effects (or externalities). A pest- and disease-free environment is a public good. If providing such an environment was left to the private sector, this could lead to free-riding on the management efforts of others and result in underinvestment in biosecurity activities. This failure of the market to adequately address pest and disease risks is a reason for government involvement in biosecurity.¹²⁹

Environmental degradation, sometimes irreversible, can be a consequence of market failures. Examples of market failure in the *Senate Environmental Biosecurity Report* included: internet plant and seed sales;¹³⁰ cargo, shipping and port operations;¹³¹ horticulture and nursery industry;¹³² livestock movement and the live animal trade;¹³³ biofouling of vessels;¹³⁴ and the ornamental fish trade.¹³⁵ In all of these cases, the possibility of short or longer term negative consequences, including costs, are not usually factored into the specific trading or related activities. As a result, others, often the community as a whole through governments or the community directly, for example, through voluntary action, must manage

¹²⁷ See, eg, Donald K Anton, Submission to the Joint Standing Committee on Treaties, Parliament of Australia, *Inquiry into Australia’s Relationship with the World Trade Organisation*, 2001; Institute for Comparative and International Law — University of Melbourne, Submission No 249 to Inquiry of the Joint Standing Committee on Treaties into Australia’s Relationship with the World Trade Organization, 2000; Mairi Jay, Munir Morad and Angela Bell, ‘Biosecurity, a Policy Dilemma for New Zealand’ (2003) 20 *Land Use Policy* 121; Michael B Margolis, Jason F Shogren and Carolyn Fischer, ‘How Trade Policies Affect Invasive Species Control’ (2005) 52 *Ecological Economics* 305; Sophie Riley, ‘Heads I Win, Tails You Lose: Uncertainty and the Protection of Biodiversity from Invasive Alien Species’ (2011) 14 *Asia Pacific Journal of Environmental Law* 139; Mark Wu and James Salzman, ‘The Next Generation of Trade and Environment Conflicts: The Rise of Green Industrial Policy’ (2014) 108 *Northwestern University Law Review* 401.

¹²⁸ Department of the Prime Minister and Cabinet, *Budget 2017–18: Portfolio Budget Statements 2017–18, Budget Related Paper 1.14* (2017) 5.

¹²⁹ Productivity Commission (Cth), *Regulation of Australian Agriculture — Inquiry Report No 79* (2016) 319.

¹³⁰ *Senate Environmental Biosecurity Report*, above n 1, 80.

¹³¹ *Ibid* 82–4.

¹³² *Ibid* 84–6.

¹³³ *Ibid* 84, 87–9.

¹³⁴ *Ibid* 112–7.

¹³⁵ *Ibid* 120–4.

the problem and bear the costs. The problems for environmental biosecurity from these factors can be greater than for industry, because of the distinguishing characteristics mentioned in section 2 above.

The Committee, however, did not use this information about market failure to make recommendations about the deeper issues underlying market failure in the biosecurity situation, which affects the environment as much as, or more than, industry. Its recommendations were limited to operational matters affecting the specific matters mentioned above, such as enforcement action against internet traders and review of shipping cargo surveillance,¹³⁶ rather than government action on matters that might generate long term market practice changes, such as prices, competition and reduction of asymmetric information problems. Acceptance of the 2017 *Review of the Intergovernmental Agreement on Biosecurity* recommendations on charges (container levies, increased passenger movement charges, expansion of land-based levies and a universal, *ex ante* emergency response mechanism) would be an example of addressing market failure.

A 2017 study concludes that market failure issues are still prevalent in biosecurity.¹³⁷

VI INSTITUTIONAL ISSUES

Environmental biosecurity outcomes are affected by institutional arrangements. Proposals for an Environmental Health Australia organisation and for a separate biosecurity authority and the place of the biosecurity function within government administration are all important issues influencing environmental biosecurity outcomes.

Institutional arrangements in Commonwealth administration have substantial, even decisive, effects on how activities are carried out. History has kept biosecurity institutionally tied to health and industry interests. Now there is recognition that environmental biosecurity is just as significant as health and industry, and perhaps more so, as the latter two are dependent on it. For example, the Queensland agricultural research plan includes the statement that ‘long-term agricultural productivity is dependent on appropriate conservation and custodianship of natural resources and protection of land, resources and the environment.’¹³⁸ Therefore an important issue is how the Senate Committee addressed the proposal for an Environmental Health Australia organisation, as well as questions about the need for a separate statutory organisation for all biosecurity management, and where to locate the biosecurity function in Commonwealth Government administrative arrangements. The following sections demonstrate that the Committee had sufficient evidence before it to contribute suggestions for institutional improvement but failed to do so. Subsequent developments may result in more formal involvement of environmental interests in environmental biosecurity management.

¹³⁶ Recommendation 15 (internet plant and seed sales), Recommendation 17 (cargo, shipping and port operations), Recommendation 18 (horticulture and nursery industry), Recommendations 19, 20 and 21 (livestock movement and the live animal trade), Recommendations 22 and 23 (biofouling of vessels) and Recommendations 24 and 25 (the ornamental fish trade).

¹³⁷ Ruth Ahchow, Garry Griffith and Susan Hester, ‘Biosecurity in Australia: An Assessment of the Current Funding Approach’ (2017) 20(Paper 8) *Australasian Agribusiness Perspectives* 120, 137.

¹³⁸ Department of Agriculture, Fisheries and Forestry (Qld), *Department of Agriculture, Fisheries and Forestry Agricultural Research, Development And Extension Plan* (2013) 26.

A *Proposal for Environmental Health Australia*

The Invasive Species Council proposed to the Senate Committee that a national body entitled Environment Health Australia be established to improve preparedness for invasive species incursions. The proposal was supported in an Australian Greens Minority Report. The Australian Greens asserted that ‘the Committee has not adequately acknowledged that environmental biosecurity poses a very serious problem for Australia, and that institutional change is required if we are to address it.’¹³⁹

The Australian Greens based their support for establishing Environmental Health Australia on: the need for a separate voice in decision making; the need to overcome past failures (such as no assessment and prioritisation of species threatening the environment since 2009); the need to counter the staff cuts then imminent in the Department of the Environment and the need for new funding.¹⁴⁰

The Committee acknowledged that ‘preparedness for environmental biosecurity threats and the capacity to respond to incursions that pose a threat to the environment lag behind industry biosecurity,’¹⁴¹ but rejected the proposal for establishing a separate Environmental Health Australia organisation. This was partly for funding reasons.¹⁴² The Committee considered that improvement could come from better coordination and information sharing and changes in the National Environmental Biosecurity Response Agreement.¹⁴³

The Committee could at least have concluded that the proposal and the reasoning of those supporting the Environmental Health Australia proposal justified further consideration. It could have suggested alternatives, such as making other changes to existing organisation and funding arrangements to achieve similar outcomes. The 2017 *Review of the National Environmental Biosecurity Response Agreement* at least accepted that the proposal had merit, even though it recommended no change in current arrangements (primarily for funding reasons). That recommendation be considered when decisions are taken about the *Review of the Intergovernmental Agreement on Biosecurity*.¹⁴⁴

B *A Separate Statutory Organisation*

The Committee noted that opposition to the proposal to establish Environmental Health Australia included the risk that it might further fragment the biosecurity system.¹⁴⁵ Nursery & Garden Industry Australia concluded in its submission that the need was to ‘cut across departmental silos.’ The latter suggested that ‘We need the current system to be improved as identified in past reviews, not a separate system to consider the Australian Environment, after all there is only ‘ONE’ environment.’¹⁴⁶

The line of thinking about ‘ONE’ environment raised by Nursery & Garden Industry Australia could have been taken up by the Senate Committee to revive the national

¹³⁹ *Senate Environmental Biosecurity Report*, above n 1, 149.

¹⁴⁰ *Ibid* 149–51.

¹⁴¹ *Ibid* 133.

¹⁴² *Ibid*.

¹⁴³ *Ibid*.

¹⁴⁴ *Review of the National Environmental Biosecurity Response Agreement*, above n 11, 9–10.

¹⁴⁵ *Ibid* 43, 132.

¹⁴⁶ Nursery & Garden Industry Australia (Submission No 55), above n 43, 6.

biosecurity authority idea recommended in the *Nairn Review* and the *Beale Panel* in 1996 and 2008 respectively¹⁴⁷ and by another Senate Committee in 2014.¹⁴⁸ Such an authority would preside over biosecurity generally, whereas the Environment Health Australia proposal involves adding a specialist environmental biosecurity collaborative body to existing arrangements.

A significant benefit of establishing a separate independent biosecurity authority would be some disentangling of biosecurity from the institutional bias towards agriculture policy and programs. Such an outcome would presumably open the way for an improved effort on environmental biosecurity. An alternative scenario is that a new authority might in practice involve little more than rebadging existing processes. The comments below on the place of biosecurity legislation in the Administrative Arrangements Order relate to this point.

In 2015 the Government rejected a recommendation to establish a separate biosecurity agency independent of a department¹⁴⁹ from the Senate Rural and Regional Affairs and Transport References Committee inquiring into the effects of imports of pineapple, ginger and potatoes on Australian growers. The Government's reasoning was: the desire for smaller government; the difficulty of disentangling biosecurity from other departmental functions, such as natural resource management, agricultural productivity, and economic analysis; and an opaque statement about the 'interconnection of issues'.¹⁵⁰

The Senate Committee on Environmental Biosecurity heard evidence supporting the need for a single peak body to implement an invasive alien species biosecurity regime.¹⁵¹ This evidence provided an opportunity to revisit the separate statutory body issue and to address the two important issues of a fragmented system and an institutional bias against environmental biosecurity. A creative approach would have been to recommend a new national biosecurity body not tied to industry. Instead the Committee simply concluded:

environmental biosecurity performance can be improved through better coordination and information sharing between existing organisations and through addressing shortcomings in present response agreements such as the National Environmental Biosecurity Response Agreement.¹⁵²

In the end, only an Australian Greens Minority report to the *Senate Environmental Biosecurity Report* recognised the need for a separate statutory body in line with the *Beale Panel* recommendation¹⁵³ (as well as for the proposed new Environment Health Australia). The Government response to the *Senate Environmental Biosecurity Report* addressed the issue of a separate statutory biosecurity body this way:

The Australian Government does not consider it necessary to create a separate Biosecurity Agency. The Biosecurity Act provides a strong decision-making

¹⁴⁷ *Nairn Review*, above n 26, 44; *Beale Panel*, above n 27, xix.

¹⁴⁸ 2014 *Senate Report on Effect of Importing Pineapple, Ginger and Potatoes*, above n 30, 21.

¹⁴⁹ Australian Government, *Australian Government Response to the Senate Rural and Regional Affairs and Transport References Committee Report: Effect on Australian Pineapple Growers of Importing Fresh Pineapple from Malaysia, Effect on Australian Ginger Growers of Importing Fresh Ginger from Fiji, Proposed Importation of Potatoes from New Zealand* (August 2015) 21.

¹⁵⁰ *Ibid.*

¹⁵¹ *Senate Environmental Biosecurity Report*, above n 1, 39–40.

¹⁵² *Ibid* 133.

¹⁵³ *Ibid* 150–1.

framework with explicit statutory requirements for the Director of Biosecurity. This includes section 541 of the Act, which provides that, in performing functions or exercising powers under the Act, the Director of Biosecurity must have regard to the objects of the Act.¹⁵⁴

The relevant object of the Act is internally contradictory as it includes unresolved tensions between trade and environmental obligations:

to give effect to Australia's international rights and obligations, including under the International Health Regulations, the SPS Agreement, the Ballast Water Convention, the United Nations Convention on the Law of the Sea and the Biodiversity Convention.¹⁵⁵

The Government position therefore is, in practice, a reinforcement of its perspective that trade and marketing should prevail over environmental considerations.

C *Administrative Arrangements*

The place of organisations and legislation within the Commonwealth Administrative Arrangements Order is critical for understanding the priorities, attitudes and interests that will be brought to bear in administration of a government function. Ministers and interest groups take a keen interest in the process for allocating responsibilities and preparing the Administrative Arrangements Order.¹⁵⁶ The effect of the Administrative Arrangements Order is that only the Minister and the associated Department has responsibility for the assigned functions and legislation.¹⁵⁷ These allocations of responsibility are quite conscious decisions by governments. It follows that the Minister for Agriculture and that Minister's Department can be expected to administer biosecurity subject to their primary focus on agriculture and marketing responsibilities.

The question of where biosecurity should sit in Commonwealth administrative arrangements was not raised directly in Committee proceedings. The Senate Committee had sufficient evidence before it to support at least a serious questioning of the impact of the continuing administration of biosecurity (apart from health) in the agriculture portfolio.

For example, a representative of the Australian Network for Plant Conservation said in evidence that a contributing factor to the poor outcomes with the myrtle rust problem was the lack of input, through no fault of their own, of environmental agencies. He said that this was:

because most of the expertise on plant diseases resides in the primary industry agencies. The apparatus and reporting lines are all geared to the primary industry

¹⁵⁴ *Australian Government Response to the Senate Environmental Biosecurity Report*, above n 62, 23.

¹⁵⁵ *Biosecurity Act 2015* (Cth) s 4.

¹⁵⁶ Personal knowledge from direct involvement in the process of preparing Administrative Arrangements Orders.

¹⁵⁷ Joint Standing Committee of Public Accounts, Parliament of Australia, *Third Report 1952–1953: Administrative Arrangements Order Together with the Treasury Minute on the Second Report of Committee 1952–53* (1953) <https://www.aph.gov.au/Parliamentary_Business/Committees/House_of_Representatives_Committees?url=reports/1953/1953_pp201.pdf>.

agencies. Again, it is not a matter of blame; it is simply a matter of how things have evolved historically. But some corrective change is needed.¹⁵⁸

The effect of this primary industry domination was claimed to be:

The institutional arrangements and response mechanisms have, over a long period of time, been weighted against rapid responses to threats and incursions affecting or likely to affect the natural environment, in contrast to those identified as a direct threat to agriculture, other primary industries and health.¹⁵⁹

The Australian Veterinary Poultry Association Committee on Exotic Disease and Importation argued that:

The unique nature of the environment in Australia, the level of uncertainty and the possible irreversible nature of environmental impacts beyond the affected one species could justify a consideration of a different level of protection than has been deemed appropriate for agricultural commodities or even zoological exhibits.¹⁶⁰

The Committee again failed to rise to the challenge. For example, one logical approach, not canvassed by the Committee, would be to locate the biosecurity function in the Environment portfolio, with industry issues remaining the responsibility of the agriculture Minister, that is, a situation paralleling the current arrangements for health biosecurity. Such an approach would recognise that economic activity, including trade, is dependent on natural systems. The majority Committee approach put no pressure on the Government to improve the situation for environmental biosecurity to the extent that institutional changes is required.

The *Review of the Intergovernmental Agreement on Biosecurity* and the *Review of the National Environmental Biosecurity Response Agreement* have also accepted the status quo, subject to greater formalised involvement of environment agencies in environmental biosecurity decision making. The *Review of the Intergovernmental Agreement on Biosecurity* does recognise the need to strengthen environmental biosecurity.¹⁶¹ It made several recommendations covering stronger involvement of environmental agencies in biosecurity management, and establishment of a new Chief Community and Environmental Biosecurity Officer and supporting Committee. The *Review of the National Environmental Biosecurity Response Agreement* accepted the possibility of such developments.¹⁶² That review also, however, reinforced the concept that current administrative arrangements involving agriculture control of biosecurity, including environmental biosecurity, should continue.¹⁶³

¹⁵⁸ Evidence to Senate Environment and Communications References Committee, Parliament of Australia, Hobart, 10 November 2014, 8 (Robert Owen Makinson).

¹⁵⁹ Mr D Laing (Submission No 63), above n 41, 3. Mr Laing worked with Sir Ninian Stephen when he was the first Australian Ambassador for the Environment.

¹⁶⁰ The Australasian Veterinary Poultry Association Committee on Exotic Disease and Importation (Submission No 51), above n 112, 8.

¹⁶¹ *Ibid* 45–57.

¹⁶² *Review of the National Environmental Biosecurity Response Agreement*, above n 11, 3, 10.

¹⁶³ *Ibid* 9–10.

VII THE CHALLENGE OF GLOBAL ISSUES

The Committee recognised that climate change will have an impact on invasive species problems in Australia.¹⁶⁴ All the global changes in the natural world now well underway affect environmental biosecurity. They involve: changing biodiversity and balance of life forms (which involve spread of pest plants and animals and the increase of human contributions to that spread); changing composition of the atmosphere and the oceans (associated climate and ocean changes influence environmental biosecurity); changing land forms and hydrology (with consequential effects on ecosystems); and pollution (which involves toxification of ecosystems).¹⁶⁵

The *2014 CSIRO Report* on Australia's biosecurity future¹⁶⁶ raised in Committee proceedings¹⁶⁷ comprehends global change issues. It links biodiversity loss with climate change and human activities, and mentions other global change issues such as land use change and use of synthetic chemicals. The section in the report on the environment emphasises the relationship between biosecurity and ecosystem services, with mention of water, carbon sequestration and climate. The *2014 CSIRO Report* highlights the potentially adverse impacts of increased trade and travel, biodiversity and ecosystem resilience decline, climate change and limited budgets for environmental biosecurity.

The *2014 CSIRO Report* includes propositions about the way forward to prevent and respond to biosecurity problems, covering policy, science and technology, and communication and engagement. Those relating to environmental biosecurity include funding, continuity of action, incentives, monitoring, biodiversity/biosecurity research, better public understanding and engagement, and addressing skills and capability gaps.¹⁶⁸

Despite the Senate Committee's recognition of the significance of climate change for environmental biosecurity, its recommendations do not provide practical ways to take up the challenges of global changes raised by the *2014 CSIRO Report* on biosecurity futures. The only recommendation directly relating to global changes was for a review of whether there is sufficient capacity for research to respond to climate change (Recommendation 13).

VIII THE IMPACT OF THE SENATE COMMITTEE REPORT AND CONTINUING DEVELOPMENTS

The *Senate Environmental Biosecurity Report* fell well short of what is needed to overcome the recognised factors limiting the effectiveness of environmental biosecurity, despite its acknowledgement of the problems. Its deficiencies highlight the need to try to improve the situation by moving beyond the legacy of quarantine and biosecurity history.

The Government's response was not heartening, as mostly it simply agreed in principle with the Committee's recommendations. The Government committed yet again to the institutional arrangements that have inhibited making improvements to environmental biosecurity.¹⁶⁹

¹⁶⁴ *Senate Environmental Biosecurity Report*, above n 1, 131, 141.

¹⁶⁵ W Steffen et al, *Global Change and the Earth System: A Planet Under Pressure*, (IGBP, 2004).

¹⁶⁶ *2014 CSIRO Report*, above n 93.

¹⁶⁷ See, eg, *Senate Environmental Biosecurity Report*, above n 1, 98, 102.

¹⁶⁸ *2014 CSIRO Report*, above n 93, 10–1.

¹⁶⁹ *Australian Government Response to the Senate Environmental Biosecurity Report*, above n 62, 23.

The most recent major formal developments relating to environmental biosecurity are in Table 1 in Part I above. The *State of the Environment 2016* confirmed the continuing and growing environmental biosecurity problem (see Part II above).

The national *Established Pests and Diseases Management Framework* is part of the Intergovernmental Agreement on Biosecurity arrangements, and so does not question the systemic problems I have identified. It is, however, a step backwards for environmental biosecurity compared with the discussion paper that preceded it. The discussion paper had several references to environmental issues. For example, it suggested that key threatening processes listed under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) should be considered when determining national significant lists of pests and diseases.¹⁷⁰ This reference was not included in the *Established Pests and Diseases Management Framework*, which is more industry oriented than the discussion paper.

There is no implementation plan or ‘ownership’ of the *National Environment and Community Biosecurity RD&E Strategy*.¹⁷¹ The *Australian Weeds Strategy 2017–2027* and the *Australian Pest Animal Strategy 2017–2027* explicitly recognise environmental issues. They are, however, only guides, and so of themselves do not overcome the constraints identified above.

Commonwealth, state and territory Agriculture Ministers received the *Review of the Intergovernmental Agreement on Biosecurity* report at the Agriculture Minister’s Forum on 26 July 2017. The only reference to environmental biosecurity in the Agriculture Ministers’ Joint Statement on the report was that ‘governments need the support of community groups to monitor and report environmental pests and diseases’.¹⁷²

Acceptance of the *Review of the Intergovernmental Agreement on Biosecurity* and the *Review of the National Environmental Biosecurity Response Agreement* recommendations mentioned in earlier sections of this article would have some impact on the constraints and issues raised in the Senate Committee processes. Commonwealth government funding reductions would cease, some new resources would be available, research would increase and the environment department and community organisations would have greater roles.¹⁷³ The latter would, of course, be meaningless without a sufficient increase in the resources available to the environment department.¹⁷⁴ There is also no mechanism to guarantee that environmental biosecurity would get a fair share of any new resources and research effort. Other major constraints would remain: the historic advantage for health and industry (see the confirmation of this in section 5.4 regarding the 2017–2018 budget); the research and expertise related problems mentioned in section 5.3; the preference for trade over environment with very marginal adjustments; market failure would be only marginally

¹⁷⁰ National Biosecurity Committee, Department of Agriculture and Water Resources, *Modernising Australia’s Approach to Managing Established Pests and Diseases of National Significance: Discussion Paper* (2015) 7.

¹⁷¹ Department of Agriculture and Water Resources, *Canberra Environmental Biosecurity Roundtable 2017* (2017) 5 <<http://www.agriculture.gov.au/SiteCollectionDocuments/biosecurity/environmental-biosecurity/canberra-environmental-bio-roundtable-minutes-2017.pdf>>.

¹⁷² Department of Agriculture and Water Resources (Cth), ‘Agriculture Ministers’ Joint Statement — Release of the Intergovernmental Agreement on Biosecurity Review Report’ (Joint Statement, 26 July 2017 <<http://www.agriculture.gov.au/biosecurity/partnerships/nbc/intergovernmental-agreement-onbiosecurity/igabreview/joint-statement>>).

¹⁷³ *Review of the Intergovernmental Agreement on Biosecurity*, above n 10, Recommendations 31, 14, 33, 34, 41, 9, 10, 12.

¹⁷⁴ Assessment based on many years of personal experience in Commonwealth administration.

ameliorated by some charges and fees. The institutional arrangements would still be firmly grounded in industry. There would be no realisation of the benefits of a new, separate statutory authority seen by the *Nairn Review*, the *Beale Panel*, the Senate Rural and Regional Affairs and Transport References Committee in 2014 and the Australian Greens Minority Report in the *Senate Environmental Biosecurity Report* in 2015. The extent to which the biosecurity system would meet the challenges seen by CSIRO arising from global changes would depend on the level of increased resources and research available, with no guarantee that environmental biosecurity would get its share.

There have been some recent minor institutional changes that may help raise the profile of environmental biosecurity issues:

- an Environmental Biosecurity Roundtables process has been established, to provide an opportunity for stakeholders to come together to discuss environmental biosecurity matters and share ideas;
- the National Biosecurity Committee is establishing an Environment and Invasives Committee to replace the Invasive Plants and Animals Committee; and
- the National Biosecurity Committee has agreed to establish an industry and community advisory group.

These measures do not go to the heart of the systemic issues I have identified, as they leave intact the institutional arrangements involving industry agency control of environmental biosecurity and do not overcome the historic lag.

The Commonwealth Department of Agriculture and Water Resources is undertaking a stocktake of arrangements in the Commonwealth, state and territory administrations for managing environmental biosecurity, including inputs from interested stakeholders. A report is being prepared for consideration by the National Biosecurity Committee, the Commonwealth, state and territory committee established under the Intergovernmental Agreement on Biosecurity (February 2018).

There are new biosecurity laws and regimes in several Australian jurisdictions.¹⁷⁵ It is too soon to judge whether their impact on environmental biosecurity will exceed that from past practices.

IX CONCLUSION

The Senate Committee processes and report and the other reviews in Table 1 have provided a comprehensive guide to the problems besetting environmental biosecurity. The Senate Committee recommendations would make only limited gains for environmental biosecurity. Acceptance and effective implementation of recommendations in the 2017 *Review of the Intergovernmental Agreement on Biosecurity* and the *Review of the National Environmental Biosecurity Response Agreement* should provide additional improvements but leave the fundamental constraints on environmental biosecurity largely intact (advantage for health and industry; limited resources; preference for trade over environment; market failures and institutional arrangements). This outcome in turn reduces the capacity to deal effectively with

¹⁷⁵ *Biosecurity Act 2015* (Cth); *Biosecurity Act 2015* (NSW), *Biosecurity Act 2014* (Qld); proposed in Tasmania: Department of Primary Industries, Parks, Water and Environment (Tas), *Biosecurity Legislation Review* <<http://dpiwwe.tas.gov.au/biosecurity-tasmania/about-biosecurity-tasmania/biosecurity-legislation-review>>.

the challenges of global changes (section 7 above). The situation with these issues is unlikely to change markedly in the foreseeable future.

As environmental biosecurity is part of the sustainability concept, it is likely that general propositions affecting implementation of sustainability policies identified in an exhaustive survey in 2017 are at work in this context: - governments lack the capacity or the political will to implement effective sustainability policies while the seriousness of sustainability issues and the urgent need for change are not being effectively communicated to key stakeholders.¹⁷⁶

On the other hand, there is continuing confirmation of the existing problems. The *State of the Environment 2016* was in preparation during the period of the various processes describe above. Its conclusions are that invasive species problems, that is, environmental biosecurity problems, are increasing.¹⁷⁷ As indicated in section 5.5, the Productivity Commission has confirmed the market failure problem with biosecurity management. An extensive study of invasive animal species problems found that some of the impediments to more effective action are being partly addressed, but overall the attempts to find solutions are still piecemeal.¹⁷⁸ The 2016 *First Five Years of Australia's Biodiversity Conservation Strategy Review Report* concluded:

The most significant pressures on biodiversity have not changed greatly since the first edition of the State of the Environment in 2001, it is likely the threats identified in the Strategy [including invasive species] will continue to remain relevant as a basis for prioritising future biodiversity conservation reports.¹⁷⁹

All the evidence available to the Senate Committee and the other reviews mentioned in this article suggested the need for substantial change. The Senate Committee's recommendations and the Government's reaction to them did not deliver this. The other developments canvassed would only affect the situation marginally.

Pressure for improvement in environmental biosecurity is therefore bound to continue. The next best step would appear to be development of new approaches within the existing arrangements and resources. The new regimes in the states may provide a platform for developing and implementing new approaches, particularly if they can be influenced before they settle into new patterns of operation. For example, the following key features of the *Biosecurity Act 2014* (Qld) provide a platform for development of innovative approaches:

- capacity for quicker responses to new problems, even where there are knowledge gaps (*Biosecurity Act 2014* (Qld) s 5 – application of the precautionary principle);
- greater reliance on individual action, backed by education and various 'self regulation' initiatives (for example, *Biosecurity Act 2014* (Qld) s 23 – general biosecurity obligation imposed on individuals and organisations; *Biosecurity Act 2014* (Qld) s 104 - industry accreditation schemes and *Biosecurity Act 2014* (Qld) s 392 - compliance agreements);

¹⁷⁶ Michael Howes et al, 'Environmental Sustainability: A Case of Policy Implementation Failure?' (2017) 9 *Sustainability* 165, 179.

¹⁷⁷ *State of the Environment 2016*, above n 2.

¹⁷⁸ Paul Martin and Darren Low Choy, above n 2, 2.

¹⁷⁹ *First Five Years of Australia's Biodiversity Conservation Strategy Review Report*, above n 2, 35.

- flexibility in meeting biosecurity needs where possible, but a high level of detailed prescriptive regulation where judged to be needed (for example, the lengthy Regulation¹⁸⁰); and
- a focus on voluntary compliance rather than legal enforcement (compliance and enforcement provisions).¹⁸¹

Any new approaches will need to accommodate the many different needs and issues inherent in the ‘wicked’ problems of environmental biosecurity.

¹⁸⁰ *Biosecurity Regulation 2016* has detailed provisions about many specific issues, eg, labelling of fertilisers, feed for food producing animals, bee keeping, state wide entry restrictions.

¹⁸¹ Agriculture, Resources and Environment Committee, Parliament of Queensland, *Biosecurity Bill 2013* (2014) 52; Department of Agriculture and Fisheries, *New biosecurity laws for Queensland* 2015.