Submission to the Independent Reviewer of interactions between the EPBC Act and the agriculture sector

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This submission draws on my experience in Commonwealth administration, Commonwealth-State relations, global change and environmental research, as a member of IPCC, with UNEP, IMO, OECD and the Asia-Pacific Network for Global Change Research, in farming, industry organisations, landcare and similar organisations, and on research being undertaken as a doctoral candidate at Griffith University.

This submission addresses the need identified in the Briefing paper for improved communication of farmer responsibilities and tools for helping farmers make decisions affecting those responsibilities, reflected in question 9 in the paper:

> How do you think the Australian Government can improve achievement of its environmental protection and biodiversity conservation objectives through its interactions with the agriculture sector?

The proposals take advantage of the principle in the EPBC Act that 'the conservation of…ecological integrity should be a fundamental consideration in decision-making.'[1]

Continuing management of land and production consistent with achievement of environmental protection and biodiversity conservation, as well as knowledge about the EPBC Act and its processes, is necessary if the EPBC Act protection objectives are to be met, and if threats to the environment are to be contained and reduced.

Issues requiring attention in this context of effective communication plus effective long term management include:

1 The EPBC Act issues are inextricably entwined with other environmental issues affecting agriculture, and so a linking concept is desirable to avoid unintended consequences and neglect of some issues because of concentration on some immediate issues generated by EPBC Act requirements;

2 EPBC Act issues will invariably have a relationship in practice with the routine land management activities referred to in part 2.1 of the Briefing paper;

3 Farmers (and other interested parties such as those referred to in question 3 in the Briefing paper) should be aware of criteria used in decision making on EPBC Act issues in the Department

[1] *Environmental Protection and Biodiversity Conservation Act 1999* (Cth) s 3A.

4 Farmers (as defined broadly in the Briefing paper) will have different levels of access to knowledge and resources and limited time, as implied in part 2.1 of the Briefing paper;

5 There are other Acts relating to environmental management that also have provisions requiring explanation, and which can generate uncertainty about compliance, for example, the general biosecurity obligation in modern biosecurity legislation;

6 All the Commonwealth, State and Territory laws that overlap the EPBC Act requirements in some way have similar knowledge and compliance needs.

My submission is that issues 1 and 2 can be dealt with by use of the ecologically integrity concept defined as:

> Ecological Integrity: The quality of an ecosystem* in which natural ecological processes sustain the function, composition and structure and evolution of the system within the natural range of variation and can withstand and recover from most perturbations imposed by natural environmental dynamics or human influences.
>
> *Ecosystem: A dynamic, open system of plants, animals and other organisms, together with the non-living components of the environment.

As defined here, the concept applies just as much to production agriculture as environmental protection, noting that agricultural production is dependent on ecological processes. It links routine activities with EPBC Act requirements.[2]

Issue 3 can be addressed by publicly available guidance for decision makers based on ecological integrity, in addition to any guidance on specific EPBC Act provisions.

Issues 4-6 can be addressed by providing official guidance for farmers (and the other interested parties) to assist them in complying with the law, in improving their environmental management, and in matching production and environmental needs for the benefit of both.

Farmers will also benefit from encouragement, best of all with incentives and rewards, to adopt environmental charters and to participate in collaborative action supporting environmental improvement encompassing EPBC Act needs while avoiding misunderstandings and conflict.

Applying ecological integrity

[2] See elaboration of the desirability of basing improved agricultural practices on the concepts of profitability and ecological integrity in Gleeson, T, and N Quinn, *Australian Agriculture in the First Half of the 21st Century* (2013) Paper for Queensland State Landcare Conference 2013, 1 (text of paper at http://www.almg.org.au/resources/current-documents).

Ecological integrity is included in the EPBC Act in the principles of ecologically sustainable development,[3] and so is particularly relevant for this review. The concept is formally part of Commonwealth, State and Territory policy in Australia, as the *Intergovernmental Agreement on the Environment* provides that 'the conservation of…ecological integrity' is one of the principles that 'should inform policy making and program implementation'.[4] It therefore applies to the complimentary action States and Territories need to take to support EPBC Act requirements. It therefore also provides one of the means for addressing the Review term of reference to consider options for 'identifying opportunities for harmonisation between the EPBC Act and each state and territories' native vegetation management regimes.'

Ecological integrity is about maintaining the quality of an ecosystem in which the ecological processes sustain the function, composition and structure of the system.[5] The concept has the advantage of embedding action in the whole of life systems that support farming and other human activities. The concept is already being used in official documents directly relevant to the impact of the EPBC Act on farming, eg, see the formal advice for the brigalow ecological community, which expressly refers to the ecological integrity components of function, composition and structure.[6]

The concept is open to evolutionary changes, can be applied to any kind of ecosystem, and accommodates different priorities, such as pure environmental protection and rural production activities. It increases the prospects of maximising the opportunity for reversal of environmental degradation, eg, the decline in biodiversity and soil condition and the spread of weeds, and for allowing evolutionary processes to continue with reducing human intervention.

The definition above is simply expressed and comprehensive in scope. It allows farming systems to be placed in, rather than against, the natural systems on which they depend. It accommodates substantially transformed landscapes and novel and changing ecosystems. The definition could form the starting point for management plans and arrangements that supported any environmental improvement, including better application of the requirements of the EPBC Act. The definition should have credibility for a range of interests, for example, scholars, government agencies and industry and commercial interests – therefore part of the answer to Briefing paper question 3.

Providing guidance

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[3] *Environmental Protection and Biodiversity Conservation Act 1999* (Cth) s 3A.

[4] *Intergovernmental Agreement on the Environment* 1992 http://www.environment.gov.au/about-us/esd/publications/intergovernmental-agreement.

[5] See a brief overview of the concept at "Ecological Integrity." The Gale Encyclopedia of Science. 2008. *Encyclopedia.com.* <http://www.encyclopedia.com>.

[6] Department of the Environment and Energy, *Approved Conservation Advice for the Brigalow (Acacia harpophylla dominant and co-dominant) ecological community* 2013 *7* http://www.environment.gov.au/cgi-bin/sprat/public/publicshowcommunity.pl?id=28.

Issuing guidelines to help administrators and to provide some transparency for the public and clients is a 'best practice' approach in public administration.[7] There is nothing unusual about issuing guidelines to help those administering laws and those affected by the laws and by decisions taken under them.[8] Presumably any existing specific guidance on the obligations under the EPBC Act is being reviewed with a view to improvement – see question 2 in the Briefing paper. Decisions under the EPBC Act should reflect the application of the ecologically sustainable development principles in the Act, including ecological integrity. I therefore propose the following guidance for officials in addition to any narrower EPBC Act specific information:

> *Our decisions should suggest consistency of approach, regard for the wider natural and social environments affected by those decisions and a long term perspective. Our systems need to be as transparent as possible and generate confidence that we exercise discretions in a flexible but consistent manner.*
>
> *We accept that successful environmental protection and biodiversity conservation will be most likely if our decisions facilitate the achievement of sustaining ecological integrity, and are guided by factors that are most likely to achieve this outcome. Ecological integrity is the quality of an ecosystem in which natural ecological processes sustain the function, composition and structure and evolution of the system within the natural range of variation and can withstand and recover from most perturbations imposed by natural environmental dynamics or human influences. An ecosystem is a dynamic, open system of plants, animals and other organisms, together with the non-living components of the environment.*
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> *Decisions that take account of ecological integrity will maximise the prevention or avoidance of environmental protection and biodiversity conservation problems while conserving, enhancing or restoring the life-supporting capacities of air, ecosystems, soil and water for present and future generations. This approach will also help us meet our obligations under national agreements for environmental protection and ecologically sustainable development.*
>
> *This means that our decisions will take account of:*
>
> *(i) the interdependence of terrestrial and aquatic ecosystems that may relate to the decision, that is, the relationships among the living things and their surroundings, and the geochemical processes in the ecosystem,*
>
> *(ii) positive and negative contributions of the decision to ecological conditions within the landscape influenced directly by the decision – for example, increase or decrease in biodiversity,*
>
> *(iii) impact of the decision on conditions in the broader landscape that may influence the sustainability of resources and ecosystems – for example, downstream effects of changes in hydrology,*

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[7] See, eg, Ombudsman Western Australia *Guidelines on Decision Making* 2009 3 http://www.ombudsman.wa.gov.au/Publications/Documents/guidelines/Binder-Decision-Making.pdf; Australian National Audit Office, *Administering Regulation: Achieving the Right Balance* (Commonwealth of Australia, 2014) 21.

[8] See, eg, Australian Taxation Office, *Law administration practice statements* (2016) https://www.ato.gov.au/General/ATO-advice-and-guidance/ATO-guidance-products/Law-administration-practice-statements; National Offshore Petroleum Safety and Environmental Management Authority, *Environment Plan decision making* GL1721 Rev 3 May 2017; Australian Government and Queensland Government, *Reef 2050 Plan: Policy Guideline for Decision makers* (2016) http://www.environment.gov.au/marine/gbr/reef2050/consultation/policy-guideline.

(iv) system drivers influencing the ecological integrity of the ecosystems affected by the decision, including dominant ecological processes, disturbance regimes driven by human activities, and stressors, such as natural succession, bushfires, invasive species, pathogens and diseases and global changes (biodiversity, climate, landscape degradation, hydrology and pollution), and

(v) implications for the resilience of ecosystems, that is, the capacity of ecosystems affected by the decision to adapt to changes without losing their complexity and functions, and retaining their evolutionary capacity favouring continuing ecological integrity.

Any action by a farmer that may relate to the detail of EPBC Act obligations covered by such specific advice needs to be nested in the total farm activities and comprehend all environmental obligations, eg, under State or Territory biosecurity and vegetation management laws, and should desirably be progressive in relation to broadly defined current and future environmental management improvement goals. As proposed above, the concept of ecological integrity links all of these ideas. I therefore propose the following guidance in addition to narrower EPBC Act specific information (note that it includes elaboration about the precautionary approach, which is referred to in the EPBC Act):

The Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) may affect farming activities. The Commonwealth Department of the Environment and Energy has issued guidelines about how it incorporates ecological integrity in its decision making under the Act. The guidance in this advice is consistent with those guidelines. It does not involve any extension of any formal obligations you may have under specific sections of the Act This guidance is to assist with managing your activities to achieve outcomes consistent with the environmental protection and biosecurity outcomes of the EPBC Act. More specific information about specific issues in your situation will be available from reputable organisations such as regional councils, regional natural resource management bodies and State and Territory agencies and private advisers.

You will be most likely to act consistently with the objectives of the EPBC Act if you undertake your activities with the long term goal of achieving and sustaining ecological integrity. The best approach is to avoid a problem arising. The precautionary principle is effectively invoked whenever decisions have to be taken on the best available evidence, while accepting that uncertainties remain. The following guidance covers applying ecological integrity and applying a precautionary approach.

Ecological Integrity

Ecological integrity is the quality of an ecosystem in which natural ecological processes sustain the function, composition, structure and evolution of the system within the natural range of variation and can withstand and recover from most perturbations imposed by natural environmental dynamics or human influences.*

**An ecosystem is a dynamic, open system of plants, animals and other organisms, together with the non-living components of the environment.*

Applying ecological integrity involves conserving or restoring the variety of life and its supporting processes – the composition, structure and function of an ecosystem. The aims are:

- *to help retain populations of all the native species that regularly live in the region, and to reduce the populations of non-native (feral) species (promoting 'composition'),*

- *to help retain or produce a varied landscape, consisting of native habitats linked where necessary across sustainably productive agricultural lands, mining, urban and infrastructure areas (promoting 'structure'), and*

- *to maintain the goods and services gained from the ecosystems, including habitat for native species, agricultural production, clean water, healthy soils (promoting 'function').*

The often limited human and financial resources available for management highlight the need for holistic and ecosystem level approaches. The ecological integrity approach, involving a whole of ecosystem approach, creates resistant habitat and resilient landscapes contributing to production and environmental goals.

Action or decisions in farm management should restore, reinforce or promote ecological integrity. You should avoid:

- *reducing the extent of a desired ecosystem, for example, a remnant forest or habitat for protected or vulnerable species,*
- *fragmenting or increasing fragmentation of an ecosystem, for example by clearing vegetation for roads or transmission lines,*
- *adversely affecting habitat critical to the survival of an ecosystem, for example, by pollution or inappropriate stock management,*
- *modifying or destroying non-living factors such as water, nutrients, or soil necessary for the survival of an ecosystem, for example, by reducing groundwater levels, or substantially altering surface water drainage patterns,*
- *causing a substantial change in the species composition in an ecosystem, including causing a decline or loss of functionally important species, for example through regular burning or flora or fauna harvesting, or inadequate control of potentially pest animals,*
- *interfering with the recovery of an ecosystem,*[9] *or*
- *causing a substantial reduction in the quality or integrity of an ecosystem, for example by:*

  generating disturbances of an ecosystem without compensating action to avoid weed invasion

  causing regular mobilisation of fertilisers, herbicides or other chemicals or pollutants that kill or inhibit the growth and wellbeing of species in the ecological community.

Precautionary Approach

You will more likely to act consistently with EPBC Act requirements if you apply a precautionary approach in your operations. The following check list – provided as a practical guide to options, without suggesting any legal obligation - can assist with this:

- *base decisions on sustaining ecological integrity in the affected ecosystems, such as safeguarding productive assets from potential degradation by pests and diseases, or on restoring degraded landscapes, to secure preferred ecosystem futures for future generations;*[10]

- *seek the pathways to the preferred futures that are judged to have the lowest levels of risk for adverse consequences for the environment as well as for production and amenity;*

- *explicitly consider the potential environmental impact of the options available to achieve preferred*

[9] The action list is based on Department of the Environment, *Matters of National Environmental Significance: Significant impact guidelines 1.1* Environment Protection and Biodiversity Act 1999, 2013 11 http://www.environment.gov.au/system/files/resources/42f84df4-720b-4dcf-b262-48679a3aba58/files/nes-guidelines_1.pdf.

[10] See, eg, Department of the Environment, Water, Heritage and the Arts, *Sustainability Curriculum Framework* (2010) 4; Raupach, R, A McMichael, J Finnigan, L Manderson and B Walker (eds), *Negotiating our future: Living scenarios for Australia to 2050* (Australian Academy of Sciences, volume 1, 2012) i.

futures;[11]

- *where possible, use well established measures (for example, through demonstrated application, studies or surveys) with the highest degree of certainty about the avoidance, reduction or amelioration of adverse environmental impacts;*
- *seek and use 'cleaner production' techniques to minimise negative impacts on the environment;*
- *integrate environmental protection and biosecurity management into enterprise activities;*[12]
- *avoid decisions and action with irreversible consequences;*
- *where irreversible outcomes are unavoidable, choose an option that avoids unacceptably large impacts, or is judged to have the least impact;*[13]
- *monitor the outcomes of the decisions to detect early warnings of consequential problems;*
- *measure changes in ecological integrity, for example, by using natural capital*[14] *value indexes*[15] *that indicate the contribution of the environment to production and amenity outcomes (the productivity*

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[11] See, eg, environmental impact assessment expressly linked with the precautionary principle in: Cameron, J and J Abouchar, 'The Precautionary Principle: A Fundamental Principle of Law and Policy for the Protection of the Global Environment' (1991) 14(1) *Boston College International and Comparative Law Review* Art 2 27; International Law Association, *New Delhi Declaration of Principles of International Law Relating to Sustainable Development* (International Law association, 2002) Principle 4; Goepel, M, 'Formulating future just policies: applying the Delhi sustainable development law principles,' (2011) 3 *Sustainability* 1694.

[12] See, eg, Quinn, N, *Establishment of Environmental Management Systems for the Olive Industry,* (Rural Industries Research and Development Corporation RIRDC Publication 11/089, 2011); McNab, D, Biosecurity Queensland, *Biosecurity plans protect business* (Queensland Country Life Southern Edition, 17 August 2017) 56.

[13] This formulation parallels the requirements in relevant laws, eg, Queensland's state planning policy: Department of Infrastructure, Local Government and Planning, *State Planning Policy* 2017 39.

[14] See, eg, Jordan, C, *An Ecosystem Approach to Sustainable Agriculture* (Springer, 2013); Gleeson-White, J, *Six Capitals* (Allen &Unwin, 2014) 193 for definition:

> All renewable and non-renewable environmental resources and processes that provide goods and services that support the organisation's past, present and future prosperity, including air, water, minerals, forests, biodiversity and ecosystem health.

and simpler definition in Mooney, P and G Brown, *Ecosystem Services, Natural Capital and Nature's Benefits* (University of British Columbia, 2013) 15: 'Structure and processes of ecosystems'.

[15] See, eg, the development of an ecosystem services framework including indexes in south east Queensland: SEQ Catchments (coordinator), *the SEQ Ecosystems FRAMEWORK* http://www.ecosystemservicesseq.com.au/about-the-framework.html; Gleeson, T, *Accounting for the Environment: An Australian Natural Value Index* 2015 http://www.almg.org.au/resources/current-documents; Ogilvy, S, 'Developing the ecological balance sheet for agricultural sustainability' (2015) 6 (2) *Sustainability Accounting, Management and Policy Journal* 110; Biodiversity Working Group convened under the Meeting of Environment Ministers, *Report on the Review of the first five years of Australia's Biodiversity Conservation Strategy 2010-2030* (Commonwealth of Australia, 2016) 13, 51 http://www.environment.gov.au/system/files/resources/fee27a4f-8a96-430d-ad18-9ee8569c8047/files/bio-cons-strategy-review-report.pdf; Duchy of Cornwall, *Integrated Annual Report 2017 For the year ended 31st March 2017* 31 http://duchyofcornwall.org/assets/images/duchy-iar-2017.pdf; Scottish Natural Heritage, *Scotland's Natural Capital Asset Index 2017* http://www.snh.gov.uk/docs/B814140.pdf; Wentworth Group of Concerned Scientists, *Accounting for Nature: A scientific method for constructing environmental asset condition accounts* (Wentworth Group of Concerned Scientists, pre-publication draft, 2017) http://wentworthgroup.org/wp-content/uploads/2017/02/Accounting-for-Nature-2016-FinalDraft-28Feb17.pdf.

of natural capital can be improved by human action to remove invasive species so that the production of desired ecosystem services is enhanced);

- *include a commitment to a precautionary approach in enterprise business and enterprise charters; and*
- *use continuous improvement*[16] *or adaptive management processes*[17] *to facilitate early detection and corrective action as needed in a timely, cost effective and environmentally effective way.*

Environmental charters

Environmental charters are fairly common in the business world. An environmental charter for farmers with the following introduction would provide a check list for public display, staff and contractor awareness and operational guidance for the farm while integrating EPBC Act considerations into farm management:

> We base our operation on ecological integrity: maintaining natural ecological processes that sustain the function, composition and structure and evolution of the ecosystems on the farm.
>
> This means we are committed to good environmental management, to reducing our impact on the environment and to continual improvement in everything we do. We support major goals for energy efficiency, reduction in fossil fuel dependence, biodiversity protection and zero waste.

The detailed content of the charter could cover:

- information and awareness raising;
- energy;
- water;
- landscape and biodiversity;
- waste;
- green purchasing; and
- management.[18]

Collaborative action

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[16] As promoted by the Commonwealth Department of Industry, Innovation and Science, *Making your business environmentally friendly* 2017 https://www.business.gov.au/info/run/environmental-management/making-your-business-environmentally-friendly; see a practical example of a system already available in Australia and being used by farmers at http://www.almg.org.au; Carruthers found that use of continuous improvement environmental management systems improved natural resource conditions and enhanced knowledge of risks, including knowledge of compliance requirements: Carruthers, G, *Demonstrating the benefits of environmental management systems in agriculture* (PhD Thesis, University of Tasmania, 2012) 634.

[17] See references cited in McDonald, J, 'The role of law in adapting to climate change' (2011) 2 *WIREs Climate Change* 283, 289.

[18] See potential detail in Quinn, N, *Establishment of Environmental Management Systems for the Olive Industry* (Rural Industries Research and Development Corporation, RIRDC Publication No 11/089, 2011) 53.

The Regulatory Maturity Framework commits the Environment Department to work in partnership with stakeholders. One object of the EPBC Act is to 'promote a co-operative approach to the protection and management of the environment involving governments, the community, land-holders and indigenous peoples.'[19] There are usually many other parties who show an interest in environmental issues, eg, other businesses, consumers, researchers and environmental non-government organisations. Environmental issues, including those covered by the review, are 'wicked' problems[20] - ones that are often highly resistant to resolution and characterised by complexity, uncertainty, and divergence and fragmentation in viewpoints, values, and strategic intentions. There is a need to encourage the development of collaborative arrangements so that parties with disparate views and aims can reach common understandings and visions. For example, a study in central Queensland found that more efficient and effective biosecurity strategies would follow development of a 'common vision.'[21]

Similarly, community driven environmental strategies involving landholders, government agency and researchers working together can provide an impetus for more and better action on environmental management issues where there are links with commercial farming, illustrated by the work of the Serrated Tussock Working Party for NSW and the ACT.[22] Modest support from a previous New South Wales government enabled the Working Party to develop a broad ranging strategy identifying the action that needs to be taken by public and private interests to overcome the increasingly negative impact of persistent perennial weeds – see http://www.serratedtussock.com.au. Successor governments did not maintain the support, leading to a substantial slowing of effort. This failure exacerbates the problem stated by the Ministers that 'The red-tape burden costs fall disproportionately on the farmer.'[23]

Summary

1. Ecological integrity and the precautionary principle are included in the EPBC Act in the principles of ecologically sustainable development, and can provide a sound basis for improving farmer understanding and departmental decision making under the EPBC Act.

2. Publicly available guidance for decision makers based on ecological integrity, in addition to any guidance on specific EPBC Act provisions, will provide

[19] *Environmental Protection and Biodiversity Conservation Act 1999* (Cth) s 3(1)(d).
[20] See description of 'wicked' problem issues in Australian Public Service Commission, *Tackling Wicked Problems: A Public Policy Perspective* 2007.
[21] Ponce Reyes, R, J Firn, S Nicol, I Chadès, D Stratford, T Martin, S Whitten and J Carwardine 2016 *Priority Threat Management for Imperilled Species of the Queensland Brigalow Belt* (CSIRO, 2016) 7,9, 41.
[22] Serrated Tussock Working Party for NSW and the ACT, *Improving Serrated Tussock Control* (2012) http://www.serratedtussock.com.au/?i=88&policy-papers.
[23] Frydenberg, the Hon J and Littleproud, the Hon D, *Weeding out unnecessary red tape for farmers* 29 March 2018.

transparency for the public and clients and meet 'best practice' tests for public administration.

3. Guidance for farmers based on ecological integrity and the precautionary principle (also relevant for any other interested parties whose activities affect EPBC Act outcomes) will increase the likelihood of their activities being consistent with EPBC Act requirements and with other obligations, eg, under State or Territory biosecurity and vegetation management laws.

4. Adoption of environmental charters based on ecological integrity by farmers would provide a check list for public display, staff and contractor awareness and operational guidance for the farm while integrating EPBC Act considerations into farm management.

5. Collaborative and community driven arrangements backed by incentives and rewards will reduce misunderstandings, generate common visions, and lead to credible strategies acceptable to a wide range of interests.