Government of South Australia
Department for Environment and Water

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81-95 Waymouth Street
Adelaide SA 5000

GPO Box 1047
Adelaide SA 5001
Australia
Ph: +61 8
Fax: +61 8
www.environment.sa.gov.au

Mr Josh Teague MP
Presiding Member
Natural Resources Committee
GPO Box 572
ADELAIDE SA 5000

Dear Mr Teague

I write regarding the Natural Resources Committee inquiry into Overabundant and Pest Species.

The Department for Environment and Water (DEW) welcomes this opportunity to provide input to the inquiry. This submission focusses on DEW's perspective on management of 'overabundant' native fauna and pest species with particular reference to:

1. Efficacy of existing or novel regulatory, policy and partnering frameworks used to manage overabundant and pest species;
2. Costs of managing overabundant and pest species;
3. Impacts of overabundant and pest species on agricultural outputs, environmental values, tourism, road safety, and amenity; and,
4. Any other related matters.

DEW understands that the adverse impacts of native fauna and pest species affect the community in many different ways, but equally recognises community care and concern for the conservation, and welfare, of our native fauna.

In South Australia, nearly all native fauna are protected by the *National Parks and Wildlife Act 1972,* which is administered by DEW. Pests that are invasive and pose significant external threats to others, are administered under the *Natural Resources Management Act 2004* (the NRM Act), which is within the Environment Portfolio. Under this Act, with respect to declared plants and animals, Biosecurity SA provides the lead on the development of state policies and provides guidance to Natural Resources Management (NRM) boards in their development and implementation of local pest management programs.

DEW is currently in the process of structural reform and reorganisation to ensure it is aligned to deliver the objectives of the current government. Managing the impact of introduced pests and abundant native species on biodiversity, primary industries and communities is a priority of DEW and

I expect this will be strengthened as DEW increases its focus on management of parks and wildlife across South Australia, including through the repeal of the *Natural Resources Management Act 2004* and its replacement with the Landscape SA Act.

As such, I look forward to the insights and recommendations of the inquiry as they will be able to contribute to any future reform of legislation, regulation, and policy and procedure; and will help DEW guide the management of native and pest species.

For further information on this submission, please contact Grant Pelton, A/Group Executive Director - Parks and Regions on 0408 817 760 or grant.pelton@sa.gov.au.

Yours sincerely

John Schutz
Chief Executive

2018 Natural Resources Committee Overabundant and Pest Species Inquiry

Preamble

This submission is provided by the Department for Environment and Water (DEW) and is focused on native fauna managed in accordance with the *National Parks and Wildlife Act 1972* and subordinate regulations, and management of pest species by DEW staff[1].

The conservation of wildlife in a natural environment is a primary objective of the *National Parks and Wildlife Act 1972* (NPW Act). Introduced species ('pest species') are declared under the *Natural Resources Management Act 2004* (NRM Act). Pest management is the responsibility of all landholders (e.g. government, individuals, landholders, communities, industry, etc.). The Department for Environment and Water (DEW) is obliged to comply with the NRM Act for National Parks reserves proclaimed under NPW Act and any other lands under DEW's care and control.

Natural Resources Management (NRM) Boards, supported by DEW and PIRSA Biosecurity, have a leading educative role in ensuring that communities understand the impact of pest species to agricultural production, ecological and social systems and to assist landholders meet their legislative obligations under the NRM Act.

Biosecurity SA, within the Department of Primary Industries and Regions South Australia (PIRSA), is the lead state government agency for biosecurity matters relating to introduced pest plants and animals. DEW provides support through on-ground delivery of pest plant and animal control programs and advice on risks to the environment from pest species (terrestrial and aquatic).

The South Australian Government has made a clear commitment to reform natural resources management in South Australia. Feedback from consultation on this reform has highlighted that regional communities want a system of managing natural resources that focuses on the basics that deliver effective water management, pest, plant and animal control, soil and land management . Some communities also raised the management of impact causing native fauna. In light of this feedback, the future role of Landscape Boards in management of impact-causing native species and pest plants and animal control is being considered and addressed through the Landscape SA Act reforms.

Many native species populations naturally exhibit a cyclical 'boom-bust' response to fluctuating resource availability; populations may rapidly expand with rainfall and the resulting proliferation of resources, followed by a marked reduction in numbers as resources are exploited, or during drought. However, 'overabundance' of native fauna, as it relates to this inquiry, typically stems from anthropogenic modification of the environment leading to an increase in the abundance of a species, and, in some situations, that species having an adverse impact on social, economic and/or environmental values (including agriculture, infrastructure and native biodiversity). Those anthropogenic modifications of the environment leading to overabundance typically involve removal of predators (e.g. dingos) or provision of resources (e.g. permanent water or feed) which would otherwise limit population growth. Quintessential examples of 'overabundant' native fauna in South

[1] The PIRSA and NRM Board submissions to this inquiry are also instructive.

Australia which are regularly addressed by DEW are koalas, kangaroos[2] and little corellas.

While the request for submission to this inquiry calls for information on the management of 'overabundant and pest species', DEW recognises that a native species need not be 'overabundant' to cause an impact requiring management. Indeed individual or small groups of animals can create significant impacts or threats to safety to a particular group within the community and require management – so called 'impact causing species'. DEW recognises species such as southern hairy-nosed wombat, various parrots, long-nosed fur seal, grey-headed flying fox, various waterfowl and sea birds, Australian white ibis, and common brushtail possum as examples of 'impact causing' species, which are frequent topics of community inquiry which DEW addresses. Conversely, an abundant native species need not be impact-causing (e.g. grey shrikethrush, bony herring, common froglet). Unless requiring specific mention, no further distinction is drawn between 'overabundant' and 'impact causing' species, and the latter will be used hereafter.

Management of native fauna requires consideration of a broad spectrum of community attitudes at different scales (local, regional, state, national and international), and legal and logistical practicalities. For example, the NPW Act provides for the establishment and management of reserves for public benefit and enjoyment, and to provide for the conservation of wildlife in a natural environment. Consequently, DEW needs to balance community (both local landowners and the broader community) expectations about conserving wildlife on reserves (and surrounding areas) with meeting the objectives of a park's Management Plan, e.g. managing impact-causing native species and pest species on park to reduce total grazing pressure.

When managing impact causing species, it is unrealistic to expect that a balanced outcome can be achieved that will satisfy all impacted and interested parties. However, best practice management of impact causing species should always be based on addressing actual rather than perceived impacts, and should seek to balance efficacy, target specificity, safety, humaneness, community perceptions, efficiency, logistics and emergency needs[3].Best practice management should also include collaboration with affected landholders and stakeholders.

- **Efficacy of existing or novel regulatory policy and partnering frameworks used to manage overabundant and pest species**

Legislative context

Introduced species ('pest species') are declared for control, movement and/or sale, where appropriate i.e. where they are invasive and pose significant external threats to others, under the NRM Act. These requirements will continue to be important as South Australia reforms NRM through the Landscape SA Bill.

DEW is responsible for regulating the management of native fauna in accordance with the NPW Act and subordinate regulations. DEW administers permits under the NPW Act, provides technical advice on the application of non-lethal and lethal wildlife management tools, and takes a lead role in the

[2] In this context five species of kangaroo are of frequent interest: red kangaroo, western grey kangaroo, euro, and eastern grey kangaroo, and on Kangaroo Island, Tammar wallaby.

[3] Adapted from the Australian Pest Animal Strategy 2017 – 2027. Invasive Plants and Animals Committee 2016, Australian Pest Animal Strategy 2017 to 2027, Australian Government Department of Agriculture and Water Resources, Canberra.

development of policy and the Codes of Practice for the Humane Destruction of Wildlife to ensure the requirements of the *Animal Welfare Act 1985* are satisfied. DEW also administers the legislative framework that allows commercial harvesting of kangaroos in South Australia.

Nearly all native mammals and birds, all reptiles and selected amphibians are protected by the NPW Act (the NPW Act does not cover invertebrates; and fish, sharks and allied species). This protection restricts the 'taking' of these animals (i.e. hunting, catching, restraining, killing or injuring) without a permit (section 51). As it relates to this submission, 'taking' of protected fauna may be authorised by a 'Permit to Destroy Wildlife' issued pursuant to sections 53(1)(c) or 53(1)(d) of the NPW Act as is the case for kangaroos (e.g. red kangaroos, western grey kangaroos and euros), emus and southern hairy-nosed wombats for example.

Section 68 of the NPW Act makes it an offence for a person to 'interfere with, harass or molest' a protected animal. However, the NPW Act also clarifies that a person may act reasonably in order to protect himself or herself or another person or to protect (i) property comprising plants cultivated for commercial or other purposes or animals; or (ii) property of any other kind. As it relates to this inquiry, the only permits relevant to section 68 that DEW has issued, relate to the use of Seal Control Units (i.e. seal crackers) to mitigate long-nosed fur seal impacts on the Lakes and Coorong Fishery in the Coorong National Park.

While most species of native fauna are protected by the NPW Act, Schedule 10 of this Act lists 11 native species which are specifically 'unprotected' (Appendix 1). This means that a landholder, a member of their household or an employee or agent does not require a permit to destroy[4] unprotected species where the animals are causing damage to crops, stock or other property on the land. Destruction of unprotected species must still comply with animal welfare standards outlined in the *Animal Welfare Act 1985*, the regulations under that Act and Codes of Practice (including NPW Act codes) where they exist. Of the 11 unprotected species, the little corella represents a significant impact causing species and, despite not requiring a permit to destroy the species by shooting, has been the focus of ongoing management for a number of decades. One other Schedule 10 species, the wild dog (dingo) is also a declared pest south of the Dog Fence under the NRM Act.

In essence, the NPW Act ensures native species are protected. The NPW Act itself has no 'requirement' or mechanisms for management of species, but does enable affected landholders to mitigate impacts caused by wildlife. It is old legislation (enacted in 1972), with limited updates to the wildlife sections in recent years, and therefore does not reflect contemporary wildlife management and conservation objectives (in fact, the NPW Act has no 'objectives', unlike more contemporary legislation - for example the *River Murray Act 2003* describes a series of statements known collectively as the Objectives for a Healthy River Murray to guide execution of that act).

DEW wildlife management approach

DEW recognises the need to manage conflict between wildlife and human interests, and that wildlife management must be based on sound social, economic, ecological and environmental factors. In line with Part 5 of the NPW Act ('Conservation of native animals'), which generally enables management

[4] A permit is required where the destruction of galahs and little corellas involves trapping and carbon dioxide narcosis however.

or mitigation of wildlife impacts (not specifically managing species abundance *per se*), DEW encourages the use of non-lethal methods first to reduce wildlife impacts *where practical*, before consideration of lethal actions (i.e. a Permit to Destroy Wildlife); and recognises that lethal management may be appropriate where wildlife is causing, or is likely to cause, damage to the environment, crops, stock or property, or poses a health and safety risk. A topically relevant example is Permits to Destroy kangaroos - Given the current high abundance of kangaroos, DEW promptly issues Permits to Destroy Wildlife for these species, where effective non-lethal management methods are limited or ineffective, and the species impacts are well understood. The DEW approach is broadly consistent with published governmental advice on wildlife management across Australia.

Within DEW, lethal management options are supported by internal policy and procedure regarding issuing Permits to Destroy Wildlife, and various Codes of Practice associated with appropriate humane methods of lethal management (i.e. shooting, trapping and gassing). The Permit to Destroy Wildlife application form is available on the DEW website. Permits to Destroy Wildlife are typically issued by authorised staff in the relevant region and attract no fee. DEW has internal controls over issuing of Permits to Destroy Wildlife which mean that more experienced/senior staff have delegations for higher number of animals/species. Ultimately a regional officer will make a decision on a destruction permit by assessing: non-lethal alternatives; environment and economic impacts of the species; ecology of the species; efficacy of destruction; relevant regional activities (e.g. other permits that have been issued in the area), economic cost of the impact; human health and safety considerations; animal welfare consideration; social perspectives; and legislative and regulatory requirement.

For context, DEW issued 1,008 Permits to Destroy Wildlife, which covered 64 species in 2016-17. Destruction of 84,051 individual animals was approved. Permits issued in relation to an airport Wildlife Hazard Management Plan made allowance for destruction on a 'numbers as required to ensure safe airport operations' basis.

DEW is currently preparing strategies for the management of impact causing species including kangaroos (a state-wide approach is in preparation, noting the Commercial Kangaroo Management Plan already exists), koalas (via The South Australian Koala Conservation and Management Strategy), little corellas (state-wide strategy in development) and long-nosed fur seals (via the Long-nosed fur seals in the Coorong and Lower Lakes Working Group). Information on other species, which sometimes come into conflict with humans, is published on the DEW and various Natural Resources regional websites (e.g. grey-headed flying foxes, wombats, possums and seals).

Systematic, population-scale management of impact causing species in South Australia is rare. DEW management of the Kangaroo Island koala population, via non-lethal fertility control (and historically translocation to the mainland) is the sole example. However, implementation of additional systemic population control programs (e.g. for kangaroos) would need to be assessed on a case-by-case basis depending on the ecology of the species, the nature of the impacts and economic costs and benefits and provided with adequate ongoing resources. In many cases, impacts are currently managed effectively at a site-scale, and this is readily supported by DEW (e.g. through the issuing of Permits to Destroy Wildlife to individual land managers). The potential to scale this up at a multi property or landscape level also exists by landholders working together (particularly for kangaroo species), though permits are issued at a property level to ensure appropriate accountabilities are maintained.

DEW administration of commercial kangaroo harvesting legislation

Regarding commercial kangaroo harvesting, this program exists to ensure ecologically sustainable harvesting of kangaroos and provides an alternative management option for reducing the damage caused by kangaroos (to assist with managing total grazing pressure), noting this is not the *core* intent of the program. Section 60G(1) of the NPW Act (currently) permits harvest of red kangaroo, western grey kangaroo and euro. Provision exists in the NPW Act to allow for the commercial harvesting of other protected species where certain conditions can be satisfied, however no other native fauna are currently commercially harvested. Commercial kangaroo harvesting can only occur in specified areas of South Australia under the current Commercial Kangaroo Management Plan[5]. However, commercial harvest areas are currently under review given the increase in kangaroo numbers across the state.

As well as expanding the commercial harvest area, DEW is looking to add additional kangaroo species to the commercial harvest (e.g. eastern grey kangaroo). While section 60G of the NPW Act makes provision for an expansion of commercial harvest, section 60I describes the requirements that must be fulfilled to prepare a draft management plan (or the amendment or revision of an existing management plan) to satisfactorily enable preparation of regulation under the NPW Act to enable the harvest on a species not listed in the NPW Act. Specifically, adding new commercial macropod species to those three species already described in the NPW Act would require amendment of the existing management plan and preparation of regulation(s) under the NPW Act, while expansion of the harvest area for the three existing harvest species would only require amendment of the existing management plan, noting the need to satisfy the requirements of sections 60I(2)(a), (b), (c) and (d) for that expanded area. Establishing a robust, sustainable harvest model for new species and new harvest areas is a critical task to satisfy the requirements of section 60I(2). It should be noted that conducting suitable ground or aerial surveys is an important, but complex and costly, undertaking.

DEW recognises that the kangaroo harvesting industry has a declining workforce and is currently subject to a number of challenges, particularly low meat and skin prices. These challenges are present at a time when kangaroo abundance in the commercial harvest zones are high. These issues are limiting the utility of commercial harvesting as a tool to help address kangaroo impacts. For context, in 2017 a harvest quota was set at approximately 750,000 kangaroos, with a harvest for that period of only 13% of that quota. DEW, in partnership with PIRSA, is working with the kangaroo industry and other stakeholders to ensure commercial harvesting remains viable and supports a workforce capable of humane wildlife destruction which can provide assistance to landholders to help manage the impacts of high kangaroo abundance.

Legislative reform consideration

It is recognised that the NPW Act and some of the subordinate regulations are now dated, having evolved in a piecemeal fashion over the last 46 years. The current legislative framework is not contemporary, and as a result can be relatively ineffective at handling modern wildlife management issues.

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[5] DEW 2018, South Australian Commercial Kangaroo Management Plan 2018-2022. This management plan also satisfies the requirements of the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* as a Wildlife Trade Management Plan, allowing commercial export of wildlife products

If the NPW Act were to be revised, the following *potential* reforms could be beneficial for wildlife management:

- Inclusion of an objects clause setting out the purpose and intention of the NPW Act.
- Adding provisions to enable wildlife management to be better integrated with the management of natural resources at the landscape-scale.
- Enable wildlife management outcomes which address economic, societal and environmental needs while maintaining protection for conservation of native fauna and flora.
- Enhancing the suite of regulatory responses to include options beyond fines/imprisonment.
- Including more pathways to address lower-level offences with appropriate penalty options, e.g. in the case of 'carrying on an activity for which a permit is required' - at present the only option to sanction a pest controller who has neglected to renew a permit is a court prosecution for 'take protected animal'.

However, it should be recognised that updating legislation will likely help manage impact causing species, but updating legislation won't in itself solve the issue of impact causing species, owing to the problem largely being caused by long-standing landscape change that will not easily be reversed. Other jurisdictions, with contemporary legislation, face similar problems to SA (e.g. impact causing species or the context of the impact may change) and the common approach amongst jurisdictions is to have the flexibility to act to address impact causing species on a species- and context-specific basis. Legislation must ensure management approaches adhere to community standards, are technically feasible, ensure sound welfare outcomes, and are economically viable; but also be flexible enough to deal with the reality of societal changes, emergence of new or different land uses and management techniques, dynamics of economic markets, etc. in a rapidly evolving world.

Landscapes SA reform

As described in the preamble, the South Australian Government has made a clear commitment to reforming natural resources management in South Australia. Feedback from consultation on this reform has highlighted a community interest in the management of pest species and abundant native species. In light of the feedback received, the future role of Landscape Boards in management of pest and abundant species is being considered and addressed through the Landscape SA Act reforms.

- **Costs of managing overabundant and pest species**

DEW primarily, but not exclusively, manages wildlife and pest plants and animals on land under its care and control (e.g. National Parks, Conservation Parks) for mostly environmental or animal welfare purposes. Although DEW regulates wildlife and enables management by the community in accordance with the NPW Act, managing the impacts of wildlife is the responsibility of landholders, land and resource managers, community and industry. These individual, groups or entities have a need to control the impacts caused by wildlife to acceptable levels to protect their livelihoods, safety and environmental assets, where it is consistent with the NPW Act and other legislative requirements.

DEW, is the custodian for a significant area of the state. DEW undertakes a range of active pest and

wildlife management activities[7]. Examples of these management activities include:

- Management of kangaroos on parks (public land) to reduce the species' environmental impacts in accordance with the park's management plan and internal policy and procedure.
- Lethal management of native wildlife to preserve threatened species, e.g. destruction of silver gulls to protect banded stilts (usually, but not always on public land).
- Owing to their iconic status, DEW has undertaken non-lethal population management of koalas and habitat protection on Kangaroo Island to manage the impact of overbrowsing by koalas on their habitat (across public and private land).
- Numerous pest animal control programs covering many reserves, and some private lands. E.g. aerial shooting of pigs, camels, horses and donkeys in the Innamincka/Malkumba-Coongie Lakes region.
- Management of pest plants in reserves, such as the control of African boxthorn in Innes National Park and surrounding private lands for biodiversity outcomes.

The exemplar program of DEW's success in integrated management of impact causing and pest species is the Operation Bounceback Program. This is a 25 year strong ecological restoration program and a model for managing pests (e.g. goats, foxes and rabbits) and impact causing species (i.e. over-abundant kangaroos) at a landscape scale within Ikara-Flinders Ranges National Park and adjoining properties to achieve positive environmental and ecological outcomes. These include the re-introduction of native species such as the Common Brushtail Possum and Western Quoll and native vegetation recovery.

Given the expected population trajectories of some pest or impact causing species (whether that be long-term or episodic/seasonal increases) and the increasing number of pests and impact causing species requiring attention, it is expected that the social, economic and environmental impacts of these species will continue to increase; as will the costs of addressing those impacts.

DEW will enable and support the community to manage impact causing species, and indeed take an active role in managing issues, particularly for species that are widespread and may benefit from coordinated or scaled-up intervention, e.g. management of little corellas and kangaroos. However, given that many of the issues associated with impact causing species are long-standing and intractable, and are driven by anthropogenic modifications of the landscape which are unlikely to change, it should not be expected that simple, rapid or inexpensive solutions can be found.

Ultimately, operational costs of managing pests and impact causing species should remain with affected parties (i.e. landholders), and this would include DEW for land under its care and control. Given the need to ensure native fauna are appropriately conserved, any consideration of a government-led, state-wide on ground management program for impact causing species must not overlook the significant ongoing financial commitment required.

DEW wildlife management efforts will continue to address the mitigation of impacts, as provided for in the NPW Act. However, DEW has and will continue to pursue more contemporary wildlife management options, including investigating the relationship between species abundance and magnitude of impact requiring management. As such, it is critical that the impacts are well understood, as this provides context to inform options to mitigate impact, which may be more

[7] often in partnership with NRM Boards, non-government organisations and volunteers etc.

nuanced than simply reducing the size of the overall animal population (e.g. fencing in some areas to exclude wildlife, or collars on trees to minimise overbrowsing, or localised destruction of wildlife without specific need for context around the total population size).

Regarding pest species, DEW focuses on pest species management actions that meet its legislative requirements as a land manager, and will have positive outcomes (on and off park) and safeguard particular environmental values such as threatened plants species and ecological communities and cultural heritage sites. Integrated pest management requires a long term focus and ongoing funding to achieve conservation goals. DEW resources to manage pest species are limited. To implement pest species programs in the most efficient and cost effective way DEW collaborates with other Government agencies, affected landholders, communities, volunteers and industries and adopts a risk management approach to determine priority areas. Pest management is funded by existing DEW resources and through Commonwealth funding for priorities specific to national obligations.

- **Impact of overabundant and pest species on agricultural outputs, environmental values, tourism, road safety, and amenity**

Impact causing species affect agricultural outputs, environmental values, tourism, road safety, and amenity. The range and magnitude of impacts varies with the species and the nature of the impact. A wide range of impact-causing native species are a focus of DEW attention, with the current management focus on addressing the species impacts. Kangaroos[8], little corellas, southern hairy-nosed wombats and koalas are species causing impact over a broad spatial-scale. A wider range of species create more localised impacts, notably long-nosed fur seals, grey-headed flying foxes, and Cape Barren geese.

As an example, kangaroos are a species creating both significant adverse and beneficial impacts depending on the context. The frequently reported issue of vehicle collisions with kangaroos is a state-wide issue with potential for severe consequences for public safety. Similarly, kangaroos can impact agricultural outputs and environmental values by their grazing impacts, and damage fences. Conversely, kangaroos are valued and contribute positively from a tourism and public amenity perspective (as well as the commercial industry). DEW often receives significant (negative) correspondence when undertaking kangaroo culls within the reserve system, and/or in response to local destruction permits issued on private lands. Koalas and long-nosed fur seals are other impact causing species that also create significant economic and community benefit as iconic tourism attractions, whilst noting the adverse ecological (koala) and industry (long-nosed fur seals) impacts.

While kangaroo impacts vary widely and can be linked to a range of impact criteria, most other impact causing species create more focussed impacts. As such it is difficult to make broad, generalised statements about impacts and similarly challenging to make generalised recommendations for their management.

DEW contributes to management of pest species and total grazing pressure at the landscape scale within reserves and across land tenures. By way of example, on Kangaroo Island DEW undertakes feral animal control and weed control in accordance with NRM Board identified priority species. Feral

[8] In this context five species of kangaroo are of frequent interest: red kangaroo, western grey kangaroo, euro, eastern grey kangaroo and Tammar wallaby (on Kangaroo Island).

cat eradication on and off park will protect native wildlife from predation and parasitic diseases such as Toxoplasmosis. DEW develops Threatened Species Recovery Plans such as the Recovery Plan for Twelve Threatened Orchids in the Lofty Block Region of South Australia that set out the research and management actions, including management of pest and impact causing species, necessary to stop the decline of, and support the recovery of, listed threatened species or threatened ecological communities. Implementation of management actions is undertaken in collaboration with volunteers, landholders, botanists and ecologists to mitigate pest incursions on threatened species on and off park.

- **Any other related matters**

Issues of impact causing species are typically longstanding and intractable, and can operate at landscape/seascape level. Whilst not necessarily providing a solution to these intractable issues, DEW recognises the role of, and need for, funding for research to find more effective management methods for the range of impact causing species. Similarly, effort is also required to better understand broad community attitudes and to engage the community in finding solutions to impact causing species and their management.

Opportunities for collaborative partnerships amongst states with common issues could be explored, in a similar way that biosecurity issues are given collaborative state and commonwealth treatment. In the absence of significant investment in research, with or without legislative change, there is a need to look for the opportunities to incrementally improve impact management, e.g. by leveraging existing funding to support research, or looking for efficiencies of scale such as working across regions, states, etc.

Opportunity exists for DEW to improve publicly accessible information on the necessity and complexity of managing impact causing species. Greater access to this information may help address the contentiousness of managing native fauna and assist other land managers with addressing community concerns.

In managing impact-causing species, and indeed many facets of generally managing wildlife, DEW must work within the frameworks of Commonwealth legislation, particularly the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), and with the Commonwealth Department of the Environment and Energy (DoEE) who administer that act. Examples of where DEW wildlife management interacts with the Commonwealth, relevant to this inquiry, include the role of DoEE in regulating the export of wildlife products derived from sustainable harvest (i.e. kangaroo products), and considerations for how EPBC Act listed species of conservation concern, that also can be impact causing, are managed (e.g. grey-headed flying fox).

In pest management, DEW supports PIRSA's approach via the biosecurity continuum; specifically that prevention is the most cost-effective measure, and that surveillance and early detection are both critical. Industry and economic drivers exist to maintain borders and detect/intervene in new incursions for pests of primary production, however these drivers are less effective for environmental and social pests, and rely more heavily on government action/response. The new national approach to environmental biosecurity (Environment and Invasives Committee) will hopefully improve environmental and social pest management.

Appendix 1 – Unprotected species listed in Schedule 10 of the National Parks and Wildlife Act 1972.

Zebra Finch (*Poephila guttata*)
Budgerygah (*Melopsittacus undulatus*)
Red Wattlebird (*Anthochaera carunculata*)
Grey-backed Silvereye (*Zosterops lateralis halmaturina*)
Galah (*Cacatua roseicapilla*)
Little Corella (*Cacatua sanguinea*)
Australian Raven (*Corvus coronoides*)
Little Crow (*Corvus bennetti*)
Australian Crow (*Corvus orru cecilae*)
Little Raven (*Corvus mellori*)
Wild Dog (Dingo) (*Canis familiaris*)