



260 Franklin Street,
Adelaide SA 5000

Phone: (08) 7127 4630

Fax: (08) 8231 9773

Email: ncssa@ncssa.asn.au

Website: www.ncssa.asn.au

ABN: 40 538 422 811

GST registered

Mr Philip Frensham

Executive Officer

Environment, Resources & Development Committee

House of Assembly, Parliament House

PO Box 572

Adelaide SA 5001

March 27, 2015

Re: Environment, Resources and Development Committee Biodiversity Inquiry

Dear Mr Frensham,

The Nature Conservation Society of South Australia (NCSSA) welcomes the opportunity to have input to this important inquiry and appreciates the extension of time granted to enable us to do this.

NCSSA is a community based, not-for-profit organisation established in 1962 with a current membership of over 200 members from across the state. As South Australia's primary nature conservation advocacy organisation, our primary objective is to foster the conservation of South Australia's unique biodiversity assets through informed, science-based decision making. We have an active interest in the protection and conservation of South Australia's natural resources with particular attention being paid to nationally and state listed threatened plants, animals and ecological communities and management of protected areas.

We offer the following comments for consideration by the Environment, Resources and Development Committee and can supply additional supporting information if required. We would also welcome the opportunity to appear before the inquiry committee to speak to this submission.

If you would like to clarify or discuss any of the points raised please contact our Conservation Ecologist, Ms Nicki de Preu on (08) 7127 4633 or via email at nicki.depreu@ncssa.asn.au

Yours sincerely,

Dr Laurie Haegi

President

Nature Conservation Society of South Australia

NCSSA Submission to the Environment, Resources and Development Committee Biodiversity Inquiry: March 2015

Background/Overview

There is widespread recognition across the world that protection of biodiversity is important in its own right; however, it is also fundamental for maintaining healthy ecosystem services and, subsequently, our way of life. Biodiversity provides ecosystem services such as oxygen, the recycling of nutrients, control of pests and diseases, pollination of crops, regulation of water quality, and exercise of climate controls (Department of the Environment, Water, Heritage and the Arts, 2009). Such is the importance of this issue the United Nations has declared 2011-2020 as the 'International Decade of Biodiversity'. Despite this, we continue to see serious declines across the world in a wide range of biodiversity indicators.

South Australia is not removed from these trends with over 60 plant and animal species becoming extinct since European settlement and over 1,000 plants and animals currently listed as critically endangered, endangered, vulnerable or rare under the *National Parks & Wildlife Act 1972* and 6 ecological communities listed nationally as critically endangered or endangered under the *Environment Protection and Biodiversity Conservation Act 1999* (EPA, 2013). Throughout South Australia, clearance of native vegetation has significantly contributed to biodiversity decline, land degradation and loss of ecosystem service with less than 20 percent of indigenous vegetation remaining in most agricultural areas and some regions reporting figures of less than 12 percent (Native Vegetation Council, 2013). Fundamental changes need to be made to the way we conserve, protect and enhance what remains of our precious native vegetation and the biodiversity it contains if we are to maintain our economic, environmental, cultural and social wellbeing.

NCSSA commends the Parliament of South Australia for undertaking the current Biodiversity Inquiry that aims to examine the regulatory and policy framework and determine whether it appropriately supports ecological processes and abates species extinction. Since our formation in 1962 we have played a key role in the formation and development of various pieces of legislation and policies that relate to the conservation and protection of South Australia's unique biodiversity assets including the *National Parks & Wildlife Act 1972* (NPW Act), *Native Vegetation Act 1991*, *Wilderness Protection Act 1992*, *Development Act 1993*, the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and the *Natural Resources Management Act 2004* (NRM Act).

We believe that the current legislative and policy framework provides a poor foundation for effective conservation of the state's natural resources with the continuing loss of biodiversity demonstrating that much more needs to be done. The ERDC Biodiversity Inquiry is timely given the urgent need to strengthen existing legislation and policies to enable better outcomes for nature conservation across the state. We urge the Committee to recommend that all current protections and environmental assessment processes encompassed by current legislation are retained and strengthened with additional measures proposed in this submission. We are aware of a considerable body of work undertaken previously by the Department for the Environment and Heritage towards developing a single integrated biodiversity act. We recommend that this information is considered as part of the inquiry but caution that in assembling a new act there are risks that current protections could be compromised during the political and drafting process.

Furthermore, given the ongoing decline in biodiversity indicators documented in the 2013 State of the Environment Report and increase in threats posed by introduced plants and animals, inappropriate fire and grazing regimes and off target effects of pesticides and herbicides, we believe there is an urgent need for increased resourcing for the environment if we are to prevent further species extinctions within South Australia. Our submission addresses these issues under the following Terms of Reference for the Biodiversity Inquiry:

1. *Whether the provisions of the current environmental and planning legislation focus on biodiversity outcomes.*

We strongly recommend that the Committee refer to recent reports by the Australian Network of Environmental Defenders Office (ANENDO, 2014) and Environmental Defenders Office SA Inc (Beach & Ballantyne, 2011) that provide comprehensive reviews of legislation pertaining to biodiversity conservation in South Australia. We support the findings and recommendations contained within these reports, in particular:

- The proposal to combine existing legislation that deals primarily with biodiversity into a new single piece of legislation;
- Amendments to other related legislation (for example the NRM Act, Native Vegetation Act and the Pastoral Land Management and Conservation Act) to provide better protection for biodiversity;
- Amendment to the NPW Act to include an objects clause setting out the purpose and intention of the Act and updates to the language used in line with current biodiversity conservation legislation;
- Strengthening of the NPW Act to enable a formal process for listing threatened species and ecological communities, populations, critical habitat, key threatening processes, threatened fish, aquatic invertebrates and non-vascular plants;
- A requirement for increased transparency and accountability in terms of processes and criteria used to make critical decisions (for example listing of threatened species) under the NPW Act.
- Strengthening of the NPW Act to provide legal obligations to undertake recovery programs and threat abatement planning.

Given the impact of infrastructure developments on native vegetation we also strongly support the need for further amendment to the Development Act that would require environmental impact statements to be prepared for all developments that will impact on habitat for threatened species and ecological communities (currently only done with major projects). We strongly recommend that the Environment Minister should have power of veto in relation to proposed projects where the biodiversity impacts will potentially be significant. We also consider the proposed objectives of the new planning system to be seriously inadequate and biased almost exclusively towards continued economic growth rather than sustainable environmental and social goals. We recommend that the promotion of ecologically sustainable development should be the primary objective of the planning system and that the system should correspond to the “avoid, mitigate, offset” hierarchy of principles which underpin the operation of the EPBC Act.

Additional areas of concern, in relation to existing legislation, are the exemptions under the Native Vegetation Regulations and Significant Environmental Benefits (SEB) Offsets. Although the South Australian *Native Vegetation Act 1991* was the first such legislation for Australia, there are some key areas that require further amendment or review to prevent further loss and degradation of native vegetation including:

- Recognition that some areas of native vegetation should not be cleared under any circumstances due to their unique species or plant assemblages.
- Further independent audit of clearance applications approved by the Native Vegetation Council (NVC) and assessment of the benefits of SEB Funds to native vegetation and habitat for threatened species and ecological communities.
- Increased protection for remnant roadside vegetation that contains populations of listed threatened plants species, particularly in areas with highly fragmented native vegetation.
- Further consideration and assessment of the extremely long time frames for revegetation to recreate habitat lost through clearance.
- Further consideration and assessment of the ability of revegetation in SEB offsets to recreate functional habitat.
- Only allow offsets to be approved if they provide a conservation benefit additional to what would otherwise occur i.e. a net gain approach should be applied.

We are currently involved with a review of the *Native Vegetation Regulations 2003* some of which allow for clearance of native vegetation without the need for a formal consent from the NVC. We have also been involved in the high level stakeholder group for review of the policy relating to SEB offsets and the metric used to calculate SEB requirements. Although we support the need for these reviews we do not believe there should be any further weakening of the legislation that would result in further decline in extent of native vegetation or have negative impacts on threatened or regionally rare species or ecological communities.

2. *The status, trends and pressures on native vegetation, biodiversity and ecological processes*

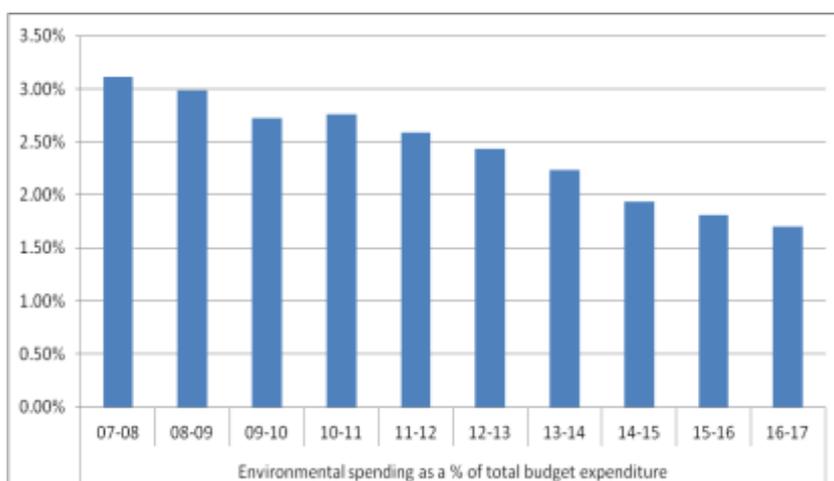
The 2011 Australia State of the Environment Report (State of the Environment Committee, 2011) contains the following key messages about the status and trends of Australia’s biodiversity that are equally applicable to South Australia:

- Biodiversity has declined since European settlement.
- Pressures are not being substantially reduced, nor is the decline in biodiversity being arrested or reversed.
- Most pressures on biodiversity that arise directly or indirectly from human activities appear to still be strong.
- The major future drivers of change i.e. climate change, population growth, economic development and associated consumption of natural resources must be managed carefully if a sustainable relationship between biodiversity and human society is to be achieved.
- Data on long-term trends in biodiversity are limited, making it difficult to interpret the state or trends of major animal and plant groups.
- Australia can improve its biodiversity management.

We strongly recommend that the Committee refer to the 2013 State of the Environment Report (SoE Report) (EPA, 2013) and State Natural Resources Management Plan (Government of South Australia 2012) that provide detailed assessments of the condition and extent of key natural resources in South Australia.

The 2013 SoE Report indicated ongoing decline in the status and trends of environmental indicators that reflect the condition of the state’s biodiversity since the previous report in 2008. The Report concluded that 20 of 27 (74%) indicators were assessed to be in poor condition, 4 (~15%) in very poor condition and only 3 (11%) in good condition. Of great concern is the fact that none of the indicators assessed were reported to be in very good condition. These results are obviously of serious concern for the future of the state’s biodiversity. The SoE Report also stated that “despite our best efforts, biodiversity in South Australia continues to decline” with 56% of our mammals, 33% of birds, 30% of amphibians, 23% of reptiles and 14% of plants threatened or presumed extinct.

When we look at how our ‘best efforts’ are being funded, the findings are not so surprising. Since the previous State of the Environment report in 2008, funding for the environment portfolio as a proportion of the state budget has been on a steady decline, which is projected to continue in the forward estimates (see chart below). The 2013/14 budget for the state environment portfolio was \$363 million, only 2.24% of the total budget. Increased funding for the environment is urgently required if the continued decline in biodiversity is to be mitigated.



Status of Threatened Bird Species in SA

The continuing decline of Australia's bird species has underpinned a revision of the EPBC Act list of threatened species in *The action plan for Australian birds 2010* (Garnett et al. 2011). This follows earlier action plans for Australian birds (1990 and 2000). The 2010 action plan recommends new listings for 19 species or subspecies that breed in South Australia. Eight of these were already listed but are now assessed to be in a worse status category than 10 years earlier. Eleven others are listed in a threat category for the first time, some because of recent taxonomic recognition of new subspecies of grass-wrens. The list also includes at least 14 threatened oceanic seabirds that use South Australian waters. It also includes an assessment of non-breeding migratory waders for the first time, and 15 taxa assessed as *threatened* visit South Australian mudflats and shorelines on a regular basis.

As a follow-up analysis to the three decadal action plans for Australian birds, Szabo et al. (2012) demonstrate that South Australia has the second-worst IUCN Red List indices of species survival for continental birds of all Australian states and territories, excluding status changes driven by threats operating outside of Australia. However, their analyses also suggest that, if conservation actions had not been in place over the past decade or more, eight listed threatened bird species that occur in South Australia would now be listed (or recommended for listing) in a worse conservation status category (Szabo et al. 2012).

Two case studies are provided as an Appendix to this submission that further demonstrate the status, trends and pressures on native vegetation, biodiversity and broader ecological processes based on NCSSA's Mount Lofty Woodland Bird Project and our Bushland Condition Monitoring Program.

The 2013 SoE Report and recent Annual Reports of the Native Vegetation (NVC) also include statistics on vegetation clearance approved by the NVC and reports of illegal clearance that indicate such activities continue to occur across the state including removal of significant trees. Although the total area cleared and number of individual trees approved for removal may be relatively low per year it is the cumulative effect of these approvals that needs to be considered as an ongoing threat with more than 1,500ha of remnant native vegetation and 1,000 individual trees approved since 2009/10.

3. *What the current and emerging threats to native species are, including climate change.*

The 2011 Australian state of the environment report (State of the Environment 2011 Committee, 2011) identifies the following pressures on Australia's biodiversity that are equally applicable to South Australia:

- fragmentation of habitat
- climate change
- land-use change
- invasive species and pathogens
- grazing pressure
- altered fire regimes
- changed hydrology.

The most frequently cited threats in listings under the EPBC Act and resulting recovery plans are habitat fragmentation and the spread of invasive species.

There is also increasing recognition that climate change is having, and will continue to have, a significant impact on Australia's biodiversity (Prober and Dunlop, 2011). Existing biodiversity laws do not adequately address the challenges posed by climate change. Large numbers of species face the loss of suitable habitat due to temperature changes (Burrows et al., 2014). In response to this many species will need to shift their present ranges in order to survive. Identifying and preserving habitat to provide 'climate refugia' for such species will be vital to minimising the impact of climate change on biodiversity (Reside et al., 2013). This will require expansion of current protected areas to ensure that sufficient intact habitat is available to accommodate range shifts. We strongly recommend that the objects of all biodiversity legislation should be amended to allow for the accommodation of range shifts in response to climate change.

There are also increasing pressures and threats across South Australia from mining and development, and the timing of prescribed burns in reserves and forestry land near Adelaide to protect adjacent housing is of concern. In particular, the impact of cool burns on the active growth, flowering and seeding of geophytes may be driving population decline in some EPBC listed orchid species. The lack of formally protected critical habitat also constitutes a major threat to some species. Targeted levels of protection (overlap of reserves with species' ranges) have been found to be less than 20% for Australian EPBC threatened species, with plants one of the most poorly represented taxonomic groups (Watson et al. 2011).

Recreational activities such as mountain biking, 4WD, horse riding, and some reserve management activities are intensifying threats (such as Phytophthora spread) to threatened plant species (e.g. Plum Leek-orchid *Prasophyllum pruinosum* and Pale Leek-orchid *Prasophyllum pallidum*) and ecological communities (e.g. Grey Box *Eucalyptus microcarpa* Grassy Woodland) in the Mount Lofty Ranges near Adelaide. These threats are escalating even within reserves, such as Belair National Park where recreational demands are being given priority over nature conservation resulting in a diminished level of protection for EPBC listed threatened species and ecological communities. The Mount Lofty Ranges have been listed by the Federal Government as one of Australia's 10 biodiversity 'hotspots'. The listing is due in part to the fact that woodland systems of this region are isolated from other similar woodland systems in eastern Australia and contain a unique assemblage of flora and fauna. Although we support the need for appropriate recreational uses of reserves we do not believe that tracks and tourism infrastructure developments should be developed in areas with high biodiversity value – particularly those where threatened or regionally rare species or ecological communities may occur.

Another emerging threat to native vegetation is the promotion of introduced pasture species without any requirement for a comprehensive risk assessment of invasiveness prior to release, as outlined in a recent article in Decision Point accessible at: <http://decision-point.com.au/?article=perversity-in-the-pasture> and in research papers by Driscoll (2014) and Driscoll & Catford (2014).

4. *What measures will enhance the resilience of ecological communities, including improving connectivity between ecological communities within parks and private land*

There are a wide range of measures that can be used to enhance the resilience of ecological communities and enable them to adapt to change and disturbance. Key measures are summarised in Australia's Biodiversity Conservation Strategy 2010-2030 (Natural Resource Management Ministerial Council, 2010) and include:

- protecting diversity
- maintaining and re-establishing ecosystem functions
- reducing threats to biodiversity.

We strongly recommend the Committee refer to this Strategy for further details of targets and priorities for action in building ecosystem resilience in a changing climate. Although significant progress has been made on this issue in South Australia over the past decade through a range of programs and policies such as DEWNR's Conserving Nature Strategy further effort and resources are required if we are to prevent further decline in biodiversity across the State. The Conserving Nature Strategy aims to establish a comprehensive, adequate, representative and resilient system of protected areas and secure long-term conservation for the full range of SA's ecosystems on public, private and Aboriginal lands. The Strategy also highlights the importance of the five NatureLinks corridors to maximise habitat connectivity and community involvement in conservation. Although there is currently a total of approximately 27,250,000 Ha of land within the protected area system (27.7% of the State) there are a number of issues concerning ongoing management of these areas and, in many cases, a lack of data to inform management that do not ensure biodiversity values are being maintained. There are also a number of IBRA Bioregions and Subregions that remain poorly conserved (<10% represented) that need to be a high priority for further acquisitions.

In recent years, a number of large pastoral leases in South Australia have been acquired by non-government organisations such as Australian Wildlife Conservancy, Bush Heritage Australia and Nature Foundation to establish private protected areas. These, and other private protected areas, are helping to build resilience and deliver regional and statewide conservation goals from South Australia's Strategic Plan, including NatureLinks and No Species Loss targets. These privately managed reserves complement the public reserve system and should contribute to the

restoration and protection of ecosystems across the broader landscape. However, there is currently no long term legislative protection for such areas or including access for mining exploration or resource extraction activities.

There are also still many areas of critical habitat for listed species and ecological communities that are either unprotected or at risk of degradation from infrastructure development, mining exploration or clearance of remnant native vegetation (both legal and illegal) that could impact on species persistence, long-term viability of populations, decline in distribution and condition of native vegetation communities.

The condition of many of these areas continues to decline with an increasing number of threats and diminishing resources to manage them. In South Australia, monitoring of trends in condition of these areas is also typically non-existent or poorly coordinated and an important area for further effort.

5. Methods to establish priorities for habitat restoration

There are currently a wide range of methodologies currently available to assist in establishing priorities for habitat restoration and enhancement however we believe that the highest priority for long-term biodiversity conservation is preservation of existing habitat. Although restoration programs can be effective in improving the habitat values of degraded remnants of native vegetation they are costly and have very limited impacts on addressing loss of biodiversity because of the generally small scale and scattered distribution of on ground projects in relation to the scale of the problems (CSIRO, 1999). There is a considerable amount of information currently available that addresses key principles for ecological restoration to assist land managers with habitat restoration however such management needs to be undertaken at a landscape scale if it is to achieve lasting environmental benefits. Long-term and rigorously designed monitoring and evaluation programs are also an essential component of habitat restoration initiatives in order to assess their effectiveness in achieving desired ecological objectives. We recommend the Committee refer to the Habitat Restoration Planning Guide for Natural Resource Managers (Clarke et al. 2010) and the [Society for Ecological Restoration](#) website for more information on these matters.

6. Models for on-ground delivery

NCSSA support the role of regional NRM bodies in past, present and future planning, delivery, reporting and outcomes of programs and activities to address the ongoing decline in biodiversity conservation values, management of threatening processes and land degradation across South Australia. We believe the NRM model for on-ground delivery has improved resources for addressing these issues but not necessarily tangible conservation outcomes. Many staff lack naturalist competencies or experience in biodiversity management, so tend to apply agricultural thinking and management practices which can mean on-ground works programs are poorly conceived and often harm native biota including threatened and declining species. In some cases there is little consideration given to off-target effects for example mass spraying of Gorse thickets on otherwise bare hillsides will destroy available habitat for native bird species in that area. This type of action-orientated rather than outcome-orientated management is common and the resulting perverse impacts on biodiversity are seldom considered.

We believe that NRM bodies have an important role to play in terms of engaging local communities in management of natural resources and increasing knowledge, capacity and expertise in relation to these matters. However, there are a large number of community based groups and non-government organisations that also continue to contribute significant skills and resources to planning, delivery, reporting and outcomes of natural resource management programs. These groups/organisations provide not only local skills and knowledge but also a significant amount of volunteer time and expertise that provides support to paid staff and program activities undertaken by NRM bodies.

There are also issues with other government instrumentalities such as Government Water and Forestry corporations that own and manage large areas of remnant vegetation in South Australia. Their management of critical habitat for threatened species and other important biota does not reflect the biodiversity conservation value of these landholdings. There have been numerous observations of inappropriate management and degradation of threatened species habitat by these corporations. DEWNR and NGOs continue to make efforts to work with these corporations however despite some small concessions the business of these corporations is water or timber production and biodiversity conservation and threatened species protection a lesser priority.

We also have serious concerns whether the current funding programs through the Federal government (Green Army and 20 Million Trees Program) will deliver long-term benefits to biodiversity conservation. As for our comments on

ToR 5 above, due to the generally small scale and scattered distribution of on ground projects in relation to the scale of the problems, we believe that these programs will have very limited impacts on addressing loss of biodiversity.

Although there has been some recent progress in South Australia with incentive payments for landholders to manage land for biodiversity conservation, we strongly recommend further investigation of the range of options available for such initiatives. We also recommend that the options for private conservation be expanded to include protection in perpetuity and exclusion from resource extraction activities.

7. Approaches and experiences of other states and territories, and overseas jurisdictions in relation to best practise to enhance ecosystem services and biodiversity values

We strongly recommend that the Committee refer to Appendix 2 of the joint submission by the NSW Nature Conservation Council, Total Environment Centre, National Parks Association and The Wilderness Society to the Biodiversity Legislation Review Panel that provides an overview of best practice international frameworks for biodiversity protection and is accessible at: http://www.nature.org.au/media/1891/140919-ncc-tec-npa-tws-submission-to-the-independent-biodiversity-legislation-review-panel_final.pdf

We also recommend that the Committee refer to the recent [Nature Conservation Review](#) produced by the Victorian National Parks Association that contains relevant information for the current Inquiry.

8. Whether the current provisions facilitate effective and proportionate compliance

We consider the current resources for compliance of the NPW Act, Native Vegetation Act and NRM Act to be severely lacking, a situation that is unlikely to improve with ongoing budget and staff reductions. Despite legislative controls to prevent adverse impacts on biodiversity many threatened species and ecological communities continue to decline due to human activity. Aside from the occasional warning, authorities seem reluctant to take the action required to address this problem. For EPBC listed matters federal legislation has made some difference through the referral process, but decline of listed species continues. There are also gross inconsistencies with some elements of South Australian legislation. For example it can be easier to clear threatened plant habitat under the Native Vegetation Act than to obtain a permit for the non-destructive collection of plant specimens under the NPW Act (Jury pers. comm.).

Current penalties need to be substantially increased and a wider range of compliance tools implemented across both the public and private all sectors to prevent adverse impacts on threatened species, populations, ecological communities and their critical habitat. Any amendments to improve these Acts in terms of biodiversity conservation outcomes will be pointless without adequate resources to administer them.

We strongly support recent advances made in the use of satellite imagery to monitor and review the condition of native vegetation in the rural agricultural regions of the State, as part of the Native Vegetation Council's change detection program.

9. Opportunities to improve regulatory efficiency, remove duplication and adopt proportionate, risk-based approaches to regulation and compliance

This issue has become more important over the past few years as the Commonwealth government proceeds with its plans to hand over its decision making powers to the South Australian government in relation to development proposals likely to significantly impact matters of national environmental significance (MNES). We have provided comments on both the draft Bilateral Assessment and Approval Agreements and stated that we do not agree with the suggestion that existing regulatory processes are resulting in delays and duplication that are causing high costs to business in Australia. One of the key findings of the Senate Environment and Communications Committee Inquiry into the Environment Protection and Biodiversity Conservation Amendment Bill 2012 (Senate Environment and Communications Legislation Committee, 2013) was that there was minimal evidence for the claims of delay and duplication by the Commonwealth. The same report also found that environmental standards would be put at risk if Federal approval powers were delegated to the States and Territories.

Under the Bilateral Approval Agreement the Commonwealth Environment Minister will no longer have responsibility for assessing or approving major project developments that may impact on MNES. Such projects will now be assessed and approved under the Development Act 1993 that does not have specific conservation objectives. We strongly recommend that further strengthening of this Act is required to ensure planning laws and systems do not undermine legislated conservation objectives. The Development Act needs to contain robust and transparent processes to protect conserve and enhance South Australia's unique biodiversity including nationally and internationally important flora, fauna, ecological communities, Ramsar wetlands, heritage places, and water resources in relation to coal seam gas and large coal mines.

We also have serious concerns about the proposal to adopt a risk-based approach to regulation and compliance of the Native Vegetation Regulations as part of the current review. The primary purpose of the risk-based approach appears to be improved efficiency and government cost savings and involves:

- weakening of monitoring criteria and reporting processes;
- a significant shift from protecting remnant vegetation to allow for increased clearing;
- a significant shift of responsibility for protection of native vegetation from government to the private sector;
- a failure to acknowledge and address the "conflict of interest" position of the proponent in such a system; and
- providing fast-track assessment pathways.

The draft discussion paper and report state that a risk-based approach will result in "improved efficiency", "quick and efficient processing" and "rapid assessment and approval process (possibly automated)". We strongly recommend that any changes to these regulations or the clearance assessment process must be supported by rigorous ecological monitoring and data and in line with the primary objective of the Native Vegetation Act i.e. the conservation, protection and enhancement of the native vegetation of the State and, in particular, remnant native vegetation, rather than administrative streamlining.

10. Measures to promote upfront clarity and transparency in environmental standards including options for self-regulation.

We strongly support the need for openness and transparency in relation to environmental standards and the need for decisions to be based on rigorous scientific data. Although the situation has improved somewhat over the past decade there are still some areas where decision making is not transparent or based on scientific data. As discussed under the previous ToR we do not support the increased role of self-regulation for environmental assessments due to a number of reasons including:

- Conflict of interest with the proponent "self-assessing" impact in circumstances where he/she has a clear personal and financial interest.
- Proponent would be required to use risk assessment skills that he/she is unlikely to possess. The effective implementation of the self-risk assessment requires a high degree of technical knowledge that many proponents will not possess. For example, species and vegetation community identification would be required; as well as knowledge of best practice management approaches for invasive native species and habitat features of paddock trees.
- Limited checks and balances to ensure the integrity of the self-regulation system.
- Inability to effectively monitor or enforce the self-regulation system.

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Appendix 1: Case studies

Case Study 1: Mount Lofty Ranges Woodland Birds Monitoring Program

NCSSA is involved in a range of significant biodiversity monitoring projects that aim to assess the condition of native vegetation and population trends of native fauna and flora. One example is the Mount Lofty Ranges Woodland Bird Monitoring Program, which is a long-term collaboration between NCSSA and Professor Hugh Possingham's research group at the University of Queensland. This program, which has been running since 1999, aims to assess the evidence for declines in woodland birds through repeated surveys of over 150 sites throughout the Mount Lofty Ranges, near Adelaide. This area has been listed by the federal government as one of Australia's 10 biodiversity 'hotspots'. The listing is due in part to the fact that woodland systems of this region are isolated from other similar woodland systems in eastern Australia and contain a unique assemblage of flora and fauna. The listing also reflects concern for the imminent losses of species—particularly birds—from the region. Woodland birds are widely recognised as important indicators of the health and condition of native vegetation both in protected areas and across the broader landscape.

The project uses expert volunteer bird surveyors to systematically survey sites across a range of land tenures, with approximately half of the sites located in National Park Reserves. These sites are resurveyed annually to look for trends in the distribution and abundance of birds in response to a changing environment, broadscale ecosystem management and on-ground works. NCSSA manages and co-ordinates the annual survey, and sources funding for the project.

The Mount Lofty Ranges Woodland Bird Monitoring Program provides a way to observe and understand the changes happening now across the landscape. With this information we have the best chance of taking action to reduce the decline of woodland birds in the region. The results of monitoring for the past 11 years show that some large generalist bird species are becoming more common, while many smaller birds are becoming less common. Ongoing monitoring will be important to help determine why bird numbers are changing and how we should focus future work to prevent the undesirable loss of species.

The MLR Woodland Bird Monitoring Program has strong community and government support, and has received funding from the Adelaide and Mount Lofty Ranges NRM Board. Researchers continue to use data from the project in scientific publications, and this data is a valuable resource in evaluating activities intended to maintain or restore biodiversity, including habitat restoration and rehabilitation, fencing to exclude stock grazing, revegetation, feral control and weed removal.

More information is available on NCSSA's Programs website page at: [Mount Lofty Ranges Woodland Bird Survey](#)

Case Study 2: Bushland Condition Monitoring Program

Bushland Condition Monitoring (BCM), is a scientifically designed and repeatable methodology developed by NCSSA that enables land managers to measure their progress in conserving native vegetation and evaluate their efforts, and can be used for both remnant vegetation management and revegetation projects. It assesses the condition within patches of remnant vegetation, but makes no assessment of patch size, fragmentation, conservation significance, or regional remnancy. Field observations are made on a number of condition indicators including:

Core Attributes

Plant species diversity
Structural diversity A: ground cover
Structural diversity B: plant life forms
Recruitment of species

Tree Health

Dieback
Lerp damage
Mistletoe infestation

Key Threats

Weed threat and abundance
Total grazing pressure
Feral animal impact

Tree Habitat

Hollow trees
Fallen logs and trees

These indicators are measurable and dynamic attributes of bushland health, biodiversity and habitat value. They demonstrate current condition and the magnitude of and direction of changes. BCM is currently being used by natural resources managers, natural resources management officers and the community across a number of NRM Regions in South Australia. Consistent application of BCM increases awareness of problems such as salinity, biodiversity decline, soil erosion and loss of fertility and the impact of pest plants and animals.

Analysis of vegetation condition data from 840 BCM sites in three South Australian NRM regions (Adelaide & Mount Lofty Ranges, Northern and Yorke, and part of the South Australian Murray–Darling Basin) was used to assess the status of native vegetation in these regions. The results provided a snapshot of vegetation condition in the three regions based on 11 of 12 BCM indicators and can be used as a baseline for future monitoring and assessment of vegetation condition.

Key findings include:

Positives

Plant species diversity remains good in the majority of sites, though an average of 25–30% of species has been lost from each site. Ground cover is relatively intact, and the abundance of fallen logs and trees is good or excellent in 40–70% of sites.

Negatives

Vegetation condition continues to be seriously affected by grazing pressure with low recruitment of plant species and high weed threat and abundance. Of great concern is the low number of hollow trees in all regions, and low structural diversity in some regions. Tree health is poor in many areas because of dieback resulting from land management impacts.

Table 1 shows the condition of BCM indicators at sites in specific NRM Regions and trends across regions.

Table 1: Vegetation condition in South Australia’s agricultural zone

Indicator	AMLR (2009)	NY (2011)	SAMDB (2010)	Summary of regions
Plant species diversity	69% of sites with good or excellent species diversity	>75% of sites with moderate to good species diversity	>70% of sites with good or excellent species diversity	Species diversity generally good; however, the abundance of species may have changed, and rare or sensitive species may be lost
Recruitment of species	Around 40% of sites with poor or very poor recruitment	57% of sites with poor or very poor recruitment	>35% of sites with poor or very poor recruitment	Recruitment is generally poor to very poor, with lowest recruitment where domestic grazing is most prevalent. This probably relates to differences in land-use type and mixed farming models in different regions
Hollow trees	69% of sites with poor numbers of hollow trees, with only 4% of sites classified as excellent	Only 40% of sites with good or excellent numbers of hollow trees	>75% of sites with very poor numbers of hollow trees	Hollow tree numbers are very poor in all regions
Total grazing pressure	91% of sites with excellent control of grazing pressure impacts	60% of sites with either poor or very poor control of grazing pressure impacts, 25% with control of grazing pressure	70% of sites with excellent control of grazing pressure impacts	Grazing pressure impact is variable (high in NY and low–moderate in AMLR and SAMDB) and probably relates to differences in land-use type and mixed farming models in different regions

Weed threat and abundance	Around 40% of sites with poor or very poor weed threat and abundance control	75% of sites with poor or very poor weed threat and abundance control	29% of sites with poor or very poor weed threat and abundance control	Weed threat and abundance is high in NY and moderate in AMLR and SAMDB. This probably relates to differences in land-use type and mixed farming models in different regions
Fallen logs and trees	Around 40% of sites with good or excellent abundance of fallen logs and trees	70% of sites with good or excellent abundance of fallen logs and trees	>55% of sites with good or excellent abundance of fallen logs and trees	Retention of fallen logs and trees is generally good
Primary canopy health	>70% of sites with moderate to very poor canopy health	70% of sites with poor to very poor canopy health	50% of sites with poor to very poor canopy health	Canopy health is generally poor, probably because of dieback from soil compaction, fragmentation and competition with weed species
Ground cover	>80% of sites with good or excellent ground cover	90% of sites with moderate or good ground cover	90% of sites with good or excellent ground cover	Ground cover is generally good, with lower cover in NY than other regions, probably relating to differences in land-use type and mixed farming models in different regions
Plant life forms diversity	77% of sites with moderate or good plant life form diversity	24% of sites with good or excellent plant life form diversity	>85% of sites with moderate or good plant life form diversity	Plant life form diversity was generally good in AMLR and SAMDB, and poor in NY. This is probably because of differences in grazing impacts in the different regions
Lerp damage	73% of sites with little or no lerp infestation	80% of sites with little or no lerp infestation	>75% of sites with little or no lerp infestation	Lerp damage is isolated to some locations and some tree species
Mistletoe infestation	All sites across the region had very low mistletoe infestation	85% of sites with very low mistletoe infestation	All sites across the region had very low mistletoe infestation	Mistletoe infestation is isolated to some locations and some tree species

AMLR = Adelaide and Mount Lofty Ranges; NY = Northern and Yorke; SAMDB = South Australian Murray–Darling Basin

Notes:

1. Some indicators were only measured in woodlands and forests (e.g. canopy health and fallen logs and trees).
2. Sites included represent 'better' native vegetation because data collection programs favour measurement in intact native vegetation (i.e. eligibility criteria for some programs exclude sites of low to very low quality).
3. Results are highly consistent with those found through stratified random sampling of vegetation condition across vegetation types in the NY region (n = 57; Milne and Mahoney 2011).

Sources: O'Connor et al. (2009), NCSSA (2010)