THE UNIVERSITY OF QUEENSLAND
AUSTRALIA

School of Earth and Environmental Sciences

15 June 2020

Ms Lisa Gropp
Presiding Commissioner
Australian Government Productivity Commission
Locked Bag 2 Collins Street East
Melbourne VIC 80003

Dear Ms Gropp,

Re: Submission to the Productivity Commission's Review of Resources Sector Regulation

Thank you for the opportunity to comment on the Productivity Commission's Draft Report on Resources Sector Regulation in Australia.

We are members of The University of Queensland's School of Earth and Environmental Sciences and the Centre for Biodiversity and Conservation Science – one of the most highly ranked (top 20) Ecology and Conservation research groups worldwide. We frequently collaborate with policy makers, non-government organisations and private stakeholders, and our research has been used to develop and improve Australia's environmental policies, including those regulating the resources sector. We also produce peer-reviewed publications in high-impact scientific journals, teach university-level courses on environmental management in mining and biodiversity offsetting policies pertaining to resources projects, and helped initiate and now lead a new Thematic Group under the International Union for the Conservation of Nature on Impact Mitigation and Ecological Compensation (https://www.iucn.org/id/node/33262).

Given our expertise, we focus this submission on Section 7 of The Commission's Draft Report "**Managing environmental and safety outcomes"** and specifically the challenges related to developing and implementing best practice **"Offsets"** (Section 7.2, page 201). In accordance with the Terms of Reference (ToR), we detail 10 Leading Practices (LP) in biodiversity offsetting policies and practice, specifically highlighting the LP currently absent from the Draft Report (DR). We also discuss the major risks that failing to implement these practice will pose to both the long-term success of Australia's resources sector and conservation of our unique natural environment.

Again, thank you for considering this submission to the Productivity Commission's review of Resources Sector Regulation. Please do not hesitate to contact us if you require further input or comment.

Yours sincerely,

Dr Laura Sonter
Lecturer & ARC-DECRA Research Fellow, Centre for Biodiversity & Conservation Science

Dr Jeremy Simmonds
Post-doctoral Research Fellow, Centre for Biodiversity & Conservation Science

Professor Martine Maron
Deputy Director, Centre for Biodiversity & Conservation Science

LEADING PRACTICES

Leading Practice 1: Biodiversity offsets are implemented according to the Mitigation Hierarchy. Offsets are a last resort to mitigating the biodiversity losses from proposed development projects.

> *"One common approval condition to offset some or all of the project's adverse impacts on some measure of biodiversity" p 201.*
>
> *"The motivation behind offsets is to allow for environmentally damaging but economically valuable developments to go ahead without compromising overall environmental quality valuable…" p 201.*

Best practice requires biodiversity offsets to be implemented according to the Mitigation Hierarchy (Figure 1; BBOP 2012). First, biodiversity losses are avoided wherever possible through changes in the project scope, such as alterations in site selection, design and scheduling of construction and operation activities. Second, biodiversity losses are then minimised through the use of onsite controls. Third, rehabilitation is undertaken when onsite disturbances to biodiversity are temporary and can be restored to a pre-existing state. Finally, any residual biodiversity losses may be offset by generating biodiversity gains elsewhere. The Mitigation Hierarchy embodies the precautionary principle, which is critical given that mining companies find offsets difficult to secure and manage (DR p. 202) and rarely are offsets found to be successful in practice (zu Ermgassen et al. 2019). In Australia, less than 40% of all offsets implemented in Western Australia can be deemed effective (May et al. 2017). The failure of biodiversity offsetting practices contributes to Australia's ongoing biodiversity crisis (Maron et al. 2015; Gibbons et al. 2018) and creates significant business risk for resource sector enterprises operating in ecologically-sensitive environments. Addressing biodiversity losses earlier in the Mitigation Hierarchy increases the likelihood of achieving No Net Loss of biodiversity and enhances trust in company operations among stakeholders (CSBI 2015).

Recommendation: proponents must demonstrate appropriate application of the Mitigation Hierarchy and regulators must ensure that offsets are used as a last resort, to compensate for residual (i.e. unavoidable) biodiversity losses.

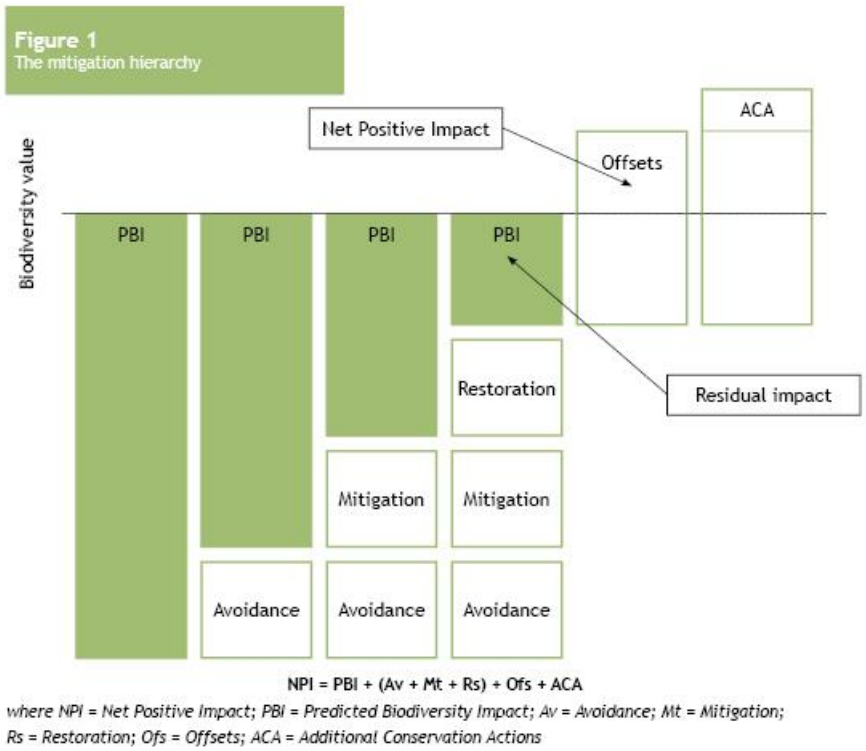

Figure 1: The Mitigation Hierarchy, adapted from https://www.cbd.int/images/biz/biz2010-03-03-p36.jpg

Leading Practice 2: Biodiversity offsets seek to achieve at least No Net Loss of biodiversity

Best practice requires biodiversity offsets achieve at least No Net Loss of biodiversity and this is a requirement (although not always implemented; see Lindenmayer et al. 2017) of many of Australia's Commonwealth and State policies. For example, the Australian Government's Environmental Offsets Policy seeks to improve or maintain the viability of impacted protected matters. Internationally, however, there is growing recognition of the significant contribution economic development activities can make to achieving more ambitious biodiversity conservation goals. Many governments and project financers are committing to achieving Net Gains in biodiversity (e.g. DEFRA 2019; IFC 2019), given the business case (IUCN 2015). However, regardless of the ultimate goal – be in No Net Loss or Net Gain of biodiversity – clarity in what is required by proponents is what will most effectively reduce risks and uncertainties in delivering on commitments. Regulators must clearly define minimum standards in offsetting requirements, making explicit the target biota to be offset, measures deemed suitable to delivering the offset, the biodiversity gains that must be demonstrated at project completion, and the time frame over which this goal must be demonstrated.

Recommendation: Regulators must clearly define the biodiversity offsetting goal (e.g. No Net Loss or Net Gain of biodiversity); what that goal outcome is relative to; and make explicit the target biota (e.g. regulated species and ecosystems) and the time frame over when this goal must be achieved.

Leading Practice 3: Offsets generate additional, equivalent and permanent gains in biodiversity

Additionality

> ***"****For one activity to be considered an offset to another, it must be additional to what would have occurred in its absence (the baseline)****"*** *p. 203.*

The biodiversity gains generated by offsetting activities must be additional to what would have occurred in absence of the development project and its approval conditions (DR p. 203). The DR identifies two ways in which offsets in Australia currently fail to comply with this requirement. (1) Selecting inappropriate baselines against which to measure any biodiversity gains achieved by offsetting. For example, assuming that an entire offset site would have been destroyed in the absence of protection, when in reality the site was under very little threat of future loss, results in an offset that generates very little biodiversity gain and development projects fall short of achieving No Net Loss goals within a reasonable timeframe (Sonter et al. 2017; Gibbons et al. 2018). (2) Permitting 'double counting', where, a single offset activity is used to generate both a carbon and a biodiversity credit to address impacts of separate projects, or a parcel of land that is already protected is merely "re-zoned" as an offset to compensate for development projects.

A third risk relates to offsets making biodiversity gains that would have been generated by other conservation activities, such as rehabilitation supported under government schemes or via private landholder activities (Gordon et al. 2015; Maron & Louis 2018). For example, our research on Species Conservation Banks in the United States of America (although not a true offsetting policy) illustrates that incentives similar to that of offsets potentially reduce uptake of other conservation activities and thus do not create additional biodiversity (Sonter et al. 2019). This risk is particularly large for aggregated offsetting systems, where proponents are required (or given the option) to pay into a government-managed fund (as suggested in the DR p. 205). If these funds are used to support activities unrelated to offsetting the specific biodiversity losses from the conditioned development, their gains are not addition and simply enable conservation costs to be shifted onto developers (Narain & Maron 2018).

Recommendation: Offsetting activities must demonstrate additionality, even when offsets are paid into and established through a centralised fund.

Recommendation: Regional-scale monitoring should be used to determine whether offsets are indeed achieving additional biodiversity gains, rather than causing leakage or crowding out of other potentially beneficial conservation activities.

Equivalence

"Most policies also require or prefer that offsets deliver benefits that are 'like-for-like' with the effects project" p 201.

The biodiversity gains generated by offsetting activities must be equivalent (i.e. of the same ecosystem type or species, and in a similar condition) to the biodiversity lost by development projects. However, as correctly identified in the DR (Box 7.2), these "like-for-like" (or, "in-kind") offset exchanges are often not possible or difficult to secure, and thus many Australian offsetting policies permit proponents to make 'out-of-kind' trades (DR p. 201). In other cases, like-for-like trades are required by approval conditions but are still not implemented in practice (Thorn et al. 2018). While out-of-kind offsets may generate some benefit for other species or ecosystems, particularly if they represent "like-for-better" exchanges (for example, by generating biodiversity gains for more highly threatened species than was lost to development), they do not achieve No Net Loss of the biodiversity feature they were intended to address. This does not comply with the Mitigation Hierarchy and has particularly negative consequences for already rare or threatened species affected by development.

Recommendation: Proponents must demonstrate that offsets generate biodiversity gains that are equivalent in type, quality and amount to the loss caused by developers, and regulators provide clear guidance on requirements when appropriate offsets are not available.

Permanence

The biodiversity gains generated by offsetting activities must last for at least the duration of the biodiversity losses. This best practice requirement is not currently mentioned in the DR. Some Australian offsetting policies require action for only 20 years (e.g. Queensland policy) or fewer (e.g. Western Australia). However, since biodiversity impacts of resource projects often last much longer than 20 years and given the long timeframes and uncertainties associated with mine site rehabilitation, long-term security of offsetting sites is essential to ensure true No Net Loss outcomes.

Recommendation: Proponents must ensure permanence of the biodiversity offset, including its protection from further development.

Leading Practice 4: Suitable offsetting sites and activities are (at least) identified prior to project approval

> *"There is at least one case of a company not having finalised its offsets years after having commenced the mining activities necessitating them." p. 203*

A single resource project may negatively impact many biodiversity features and, as such, have large and often complicated offsetting conditions. Proponents find it difficult to identify and acquire suitable sites to meet these conditions (DR p. 201) and our research has shown that, in some cases, appropriate options to generate required biodiversity gains (e.g. suitably sized area of suitable ecological conditions to generate a required ecological community) may simply not exist. Further, even when appropriate sites for offsetting do exist, acquiring these areas may be expensive and/or require lengthy negotiations with land holders, both of which can lead to lengthy project delays. To avoid these risks and their consequences (e.g. lengthy delays in project approvals, potential offset failure and net biodiversity losses), suitable offsetting sites, i.e. those that would generate an outcome in line with policy goals, must be at least identified prior to project approval. The Offsets Assessment Guide under the Australian Environmental Offsets Policy provides guidance on how to identify suitable sites, by estimating the extent to which an offset will improve the target biota and/or avert future losses, the degree of confidence that the offset will be implemented successfully, and the time it will take to deliver a conservation benefit (Miller et al. 2015).

Recommendation: Proponents must identify suitable sites and demonstrate that they can achieve policy goals prior to project approval

Recommendation: Regulators must provide clear guidance on what is expected when appropriate offsets do not exist – i.e. to comply with the Mitigation Hierarchy, impacts that cannot be offset must result in avoidance of these biodiversity losses through changes in the project scope.

Leading Practice 5: Potential trade-offs between offsets and other environmental and social values are assessed and managed prior to offset implementation

Offsetting activities are required to generate gains in specific biodiversity features, but their implementation may also influence other species or ecosystems. These effects can be positive (e.g. conserving an area of habitat for one species, may also help to conserve habitat for another species), but may also create negative trade-offs with other ecosystems (e.g. establishing habitat for one species may not necessarily be compatible the activities needed to restore and benefit other species). Further, trade-offs may also affect ecosystem services – the benefits ecosystems provide to people (Sonter et al. 2020). For example, protecting a wetland to generate a biodiversity gain may result in reduced access for local fishermen or recreants who benefit from this site (Sonter et al. 2017). The extent to which offsets in Australia negatively affect people and their wellbeing is unclear, but large consequences may exist. This is particularly true when offsets are established in areas providing important cultural values to Indigenous communities. Best practice offsetting identifies trade-offs of offsetting for other biodiversity features and people, and mitigates them through either changes in offsetting activities or through additional mitigation and compensation activities (Bull et al. 2019; Jones et al. 2019).

Recommendation: Proponents must determine potential tradeoffs between offsets and other biodiversity features and people prior to project approval and develop strategies to mitigate negative impacts.

Leading Practice 6: Monitoring and ongoing management are key to achieving offsetting goals and building trust among stakeholders

The DR accurately identifies a current lack of evidence of offsetting success (DR p 204) and recommends the use of offsetting registers to overcome this issue (DR p 205). We support the need for greater transparency around offsetting decisions and implementation, and the use of public registers to house this information (see point 7 below). However, the creation of registers alone will not produce more evidence of success. Instead, clear monitoring requirements are needed and these requirements must focus on biodiversity outcomes, rather than actions (Lindenmayer et al. 2017). Biodiversity gains made by offsets must be measured periodically, using appropriate indicators that will enable assessment of progress towards achieving No Net Loss of biodiversity goals. Monitoring must be reported and additional management must be enforced in cases where progress towards this goal is insufficient. Indeed, these ongoing best practices are critical to building trust and acceptance among key stakeholder groups (Martin et al. 2016).

Recommendation: Proponents must periodically monitor biodiversity outcomes of offsetting activities and update management of these sites if progress towards achieving set goals is insufficient.

Leading Practice 7: Updated public registers contain all information needed to compare biodiversity gains from offsets to the biodiversity losses from their development

"Public registers of activities with offset obligations and the projects developed to fulfil them provide valuable transparency about the application of offset policies. Information on offset projects should include their biodiversity values, location, date of approval, completion status, and follow-up evaluations of benefits. Where companies fulfil their offset obligations by paying into a fund, the register should include the size of the payment. Western Australia's offset register is a leading-practice example." p. 47, p. 205.

We agree that much greater transparency in the offsetting process is required – this information should not need come from freedom of information requests – and we support the use of public registers in housing this information. However, it is not sufficient to simply document offsetting activities. Instead, registers must comprehensively include all information needed to evaluate their progress towards achieving the offset goals. This requires quantitative information on biodiversity losses and gains (not just the area protected, for example), data to evaluate the assumptions underpinning the calculation of the offset requirement, the location of these sites, and details of management plans and responsibilities. Registers should be updated as monitoring is undertaken and contain details of the planned monitoring schedule.

Recommendation: Offsetting registers are needed (DLP 7.4), but they must be regularly updated and contain the information needed to determine progress towards No Net Loss of biodiversity.

Leading Practice 8: Aggregated or strategic offsetting activities must still achieve No Net Loss of biodiversity

Under certain conditions, offset fund models can improve environmental outcomes as well as potentially reduce costs for companies. In particular, governments may be better placed to determine what offset projects are likely to deliver the highest gains for the community. p. 206

With a fund, money that would otherwise have to go towards smaller offsets can be pooled for larger ones. This can open up opportunities for more promising types of offsets that are only possible at a larger scale. For example, Western Australia's Pilbara Environmental Offsets Fund will be used to deliver 'larger and more strategic landscape-scale projects than would occur if individual offset projects were delivered independently' (WA DWER 2019, p. 1)." p. 206 – 207.

Offsets must first and foremost achieve their No Net Loss of biodiversity goal, adhering to the leading practices outlined above. Under very specific conditions, and for a limited set of biodiversity features, pooling offsetting resources together may generate more biodiversity gains per offsetting dollar than a series of individual offsetting projects. For example, pooling resources may provide efficiency gains that allow the purchase of larger properties for conservation activities, and arrangement of those activities in a systematic way. However, this is not always the case – bigger is not always better. A small loss of habitat for one endangered species is not offset by generating a much larger amount of habitat for a different least concern species. Even when proponents make payments into a centralised fund, that money must still be demonstrably shown to contribute towards achieving the stated biodiversity outcome – i.e. No Net Loss of the targeted biodiversity feature – and progress towards achieving this outcome must be consistently and rigorously monitored. In many cases, this may be more difficult to achieve through a centralised government-managed fund than through individual, but tailored, projects. For example, 97% of offsets in Queensland have involved financial payments (156 conditioned projects affecting 354 environmental values), yet less than 30% of these funds have been contracted, committed or spent delivering outcomes (Qld government 2019). All unspent funds represent current net biodiversity losses and a significant liability for regulators.

Recommendation: Implementing, monitoring and evaluating aggregated offsets, such as those administered through centralised funds, must still comply with leading practices – i.e. creating additional, equivalent and permanent gains, and demonstrate progress towards achieving No Net Loss of biodiversity from the conditioned development project.

Leading Practice 9: Payments to centralised funds capture the full costs of offsetting – including risks of offset failure – so that governments do not bear the burden of biodiversity losses

"Schemes that allow companies to pay into a government-administered offset fund can deliver better outcomes while reducing costs for both companies and governments." p. 188.

"Offsets policies that allow more degrees of freedom in meeting offset obligations, such as financial contributions, can reduce some of the costs to companies, including by providing greater clarity. Financial contributions can also give governments more freedom and control to deliver priority environmental services at scale" (Box 7.2)

Successfully offsetting the biodiversity losses of development projects is likely to be an extremely expensive endeavour. Making a financial payment requires proponents to monetise biodiversity losses, which. as mentioned in the DR. is fraught (DR Box 7.2), although may involve assessing opportunity costs of the land likely to need to be purchased for the required offset, as is currently done under the Queensland Offsets Policy. Payments must also capture the risks of offset failure, which may be done using an arbitrary multipliers, and any administration costs associated with identifying and securing a suitable offsetting site. These administration costs are estimated to be significant (e.g. in Queensland, overheads represent more than 50% of the financial payments received by government); however, it is currently unclear whether these approaches to costing offsets returns a payment large enough to deliver the required biodiversity gains. There is almost no information currently available on the costs of

biodiversity offsetting (Iftekhar et al. 2019). If payments fall short of those required, administering offsets via a centralised fund shifts the consequences of large net biodiversity losses onto the regulator.

Part of the challenge of centralised funds is to recognise that the investment in expertise and research to identify what a suitable offset for a given impact must entail, and where such potential offset gains could be achieved, must be fully resourced – regardless of whether that work is carried out by the proponent or by the advisors to a central fund. This essential groundwork for offset design is often expensive and time-consuming, and requires a range of expertise on different biodiversity features and their management, design of financial instruments for the purchase of biodiversity gains, and legal and procurement advice. These costs must be built into the payments made into any centralised fund. A centralised fund also requires considerable up-front work to estimate the likely offset liabilities they will receive and the approximate full cost of acquitting those liabilities, to avoid the risk that inadequate funds are collected to resource the purchasing of the full offset benefit required. Finally, specific offset liabilities must be able to be tracked through to delivery, even when delivered as part of a larger package. A good example of this ability is shown in the Queensland offsets register for seagrass offsets.

Recommendation: the risk of offset failure must be built into the payments required.

Leading Practice 10: Biodiversity offsets contribute towards conservation targets

"Without an overarching strategy, a series of individual offsets can add up to a patchy whole." p. 188.

Currently, offsets are not address the well-documented declines in Australia's flora and fauna. Rather, they are contributing to entrenched biodiversity declines, because of their repeated failure to achieve real, measurable gains that go anywhere close to delivering No Net Loss outcomes. In part, this is a function of design – allowing actual losses to be traded for potential relative gains ('averted loss'). It is also because there is a disconnect between the contributions that the resources sector are obligated to make through offset conditions, and broader, articulated goals or strategies for the Australian biota (beyond aspirational statements like 'maintain or improve the viability' of species/ecosystems impacted by development). Overarching these environmental shortcomings is the fact that offsets are an expensive, time-consuming and complex undertaking for proponents. Better outcomes for business and biodiversity are needed, to resolve the twin failings of the status quo.

Linking compensation (offsetting) to explicit, outcomes-based targets for biodiversity represents an opportunity to much better align development and conservation (indeed, this is a key premise of the EPBC Act). A framework for doing this – 'target-based ecological compensation' (Simmonds et al, 2019 (ref 17)) – has recently been developed, and would be suited to addressing biodiversity losses (e.g. threatened species, ecosystems) under Commonwealth and State/Territory instruments that regulate the resources sector. By linking compensatory actions done at the project level to a broader goal for the impacted biodiversity, the requirements on developers – how much, and what type of compensation they need to provide – are easy to understand, and can be calculated upfront, saving time and money, and providing much-needed certainty for planning.

In target-based ecological compensation, Net Net Loss would mean that the amount of biodiversity affected by development must be maintained at the same level over time, when both the impact and the offset sites are considered. Put simply, a project must counterbalance the losses it causes with an increase at the offset site of the same amount – to replace the affected biodiversity at a ratio of 1:1. Note this is generally a very different thing to simply protecting an area at 1:1. The approach also works for more ambitious goals, such as a target to double the area of habitat for a particular threatened species so as to enable its recovery. Under target-based ecological compensation, a project that causes a loss of 100 hectares of that species' habitat would need to restore or recreate 200 hectares of that same species' habitat. The project has created twice as much habitat as it destroyed, and therefore contributes to the jurisdiction's target of doubling habitat availability for that species. In another case, a jurisdiction may accept some net losses – e.g. no more than 10% – of a particularly widespread ecosystem. Any losses to this ecosystem from development would need to conserve 9 units of that ecosystem for every one that they caused to be lost, such that no more than 10% of the ecosystem is lost across the jurisdiction.

The principles of this target-based ecological compensation approach are currently being considered for implementation in policy in resource-rich jurisdictions including the Northern Territory (https://haveyoursay.nt.gov.au/offsets-policy), and Mozambique in southern Africa.

Recommendation: When developing new, or reviewing existing biodiversity offsets policy, Australian jurisdictions should consider moving from a traditional biodiversity offsetting model to target-based ecological compensation.

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