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INTRODUCTION

Offsets put a price on those environmental impacts that cannot be avoided or mitigated, thereby providing monetary incentives to reduce environmental damage. The draft Environmental Offsets Policy developed by DSEWPaC attempts to provide a clear framework for environmental offsetting, thereby ensuring appropriate protection for Matters of National Environmental Significance (MNES), and increasing certainty for the environment, society and economic development. We welcome the DSEWPaC's reiterated commitment to impact avoidance and mitigation in the first instance (p.5). Carefully defined requirements for environmental offsets will help to encourage avoidance and mitigation, because they will essentially place a price on unmitigated impacts. The draft Policy also recognises the issue of uncertainty, which is essential given that impacts are usually quite certain and immediate, while the predicted benefits of offsets are often uncertain and might take years to be realized.

We support the intention to develop an Environmental Offsets Policy that includes a scientifically defensible, transparent and accountable framework to assist decisions about offsets. However, we are concerned that the draft Policy does not meet all its intended objectives. In this submission, we suggest ways in which the Policy could be improved.

KEY ISSUES AND RECOMMENDATIONS

The Environmental Offsets Policy has four key aims. We have identified a number of issues that represent obstacles or challenges to achieving those aims, and propose solutions to resolve those issues, as follows:

1) The Environmental Offsets Policy Consultation Draft aims to *"ensure the efficient, effective, transparent, proportionate, scientifically robust and reasonable use of offsets under the EPBC Act"*

The Policy document in its current form does not fulfil this aim. There is insufficient information and methodological detail provided for the Policy to be effectively assessed. The main points of contention include the following:

- i) There is no substantive reference to other relevant offset policy documents (state-level or federal), so it is unclear how this offsets Policy compares to, works with, or improves upon, similar existing policies;
- ii) There is no bibliography, little reference to appropriate scientific literature and no discussion or review of policy alternatives;
- iii) No evidence is provided to demonstrate that offsets are an effective policy instrument for delivering "an overall conservation outcome that improves or maintains the viability of the

- aspect of the environment that is protected by national environment law and affected by the proposed development" (p.4, Box 1);
- iv) The Environmental Offset Assessment Guide (Appendix 1) and its component 'Impact Calculator', 'Offsets Calculator' and 'Decision Ribbon' lack clear definitions, methodological and quantitative detail.
 - v) Despite the explicit Policy commitment to "effectively manage the risk of the offset not succeeding" (Section 6.1.4, p.13- 14), the Environmental Offset Assessment Guide does not appear to take uncertainty into account in any of its components.
 - vi) There is no structured guidance regarding how to formulate "clearly articulated measures of success that are linked to the purpose of the offsets and provide clear benchmarks about their success or failure " (Section 6.1.5, p.15);
 - vii) There is no clear audit and enforcement protocol; without incentives to comply and enforceable penalties for non-compliance, the financial imperatives to offset would be in danger of evaporating together with the potentially valuable outcomes.
 - viii) There is a great deal of avoidable linguistic uncertainty in the Policy draft with many terms being either vague, ambiguous, context dependent or underspecified (Burgman 2001; Regan *et al.* 2002) (e.g. "reasonable use"(p.4), "slightly disturb"(p.9)).

We suggest that this Consultation Draft should not represent the final opportunity for substantive public comment. We recommend:

- A. That the above issues are considered by policy makers and addressed within a revised Policy document. More specifically, that the revised Policy document includes:
 - i) Reference to and comparison with previous federal and current state policy offset documents;
 - ii) A critical, balanced review of the efficacy and efficiency of offsets including a review of, and comparison with policy alternatives, such as biodiversity banking credits (see e.g. Bekessy *et al.* 2010);
 - iii) A demonstration of how this offset policy would be applied. It is standard practice when proposing a quantitative environmental management approach to first test it using several case studies from various ecosystems and report the results of those tests;
 - iv) Structured guidance on tasks at the Assessment stage such as the standard of proof required to demonstrate that "all reasonable measures" have "been taken to avoid and mitigate impacts on MNES" (p.9), how 'residual impacts' on protected matters are to be calculated, how ecological value at candidate offset sites is to be determined, the standard of proof required to demonstrate that candidate offsets will "deliver an overall conservation outcome that improves or maintains the viability of the aspect of the environment that is protected by national environment law and affected by the proposed development"(p.10) and how uncertainty regarding whether the candidate offset will deliver the predicted conservation gain will be accounted for.
 - v) Transparent governance arrangements at the post-Approval stage that specify the measurement, monitoring and reporting regime, together with the auditing and

enforcement regime (Section 6.1.5, p.15). This would include specifying and resourcing a responsible body for auditing offsets, designing an enforcement regime with adequate ability to detect non-compliance, and specifying consequences for non-delivery of the agreed environmental outcomes (e.g. provisions to enact remedy or sanctions).

- vi) A detailed 'Impact Calculator' and 'Offsets Calculator', including the methods that will be used for quantification, the rationale for the choice of these methods, explicit documentation of their assumptions and a discussion of their limitations; and
- vii) A glossary of important terms in the Policy.

B. That after the points above are addressed, that the revised Policy document be submitted to another round of public consultation.

2) The Environmental Offsets Policy Consultation Draft aims to “provide proponents, the community and other jurisdictions with greater certainty and guidance on how offsets are determined and applied under the EPBC Act”

Providing greater clarity and certainty with respect to how offsets are determined and applied under the EPBC Act is important to all stakeholders. Providing the desired level of certainty however, requires that the following key points be addressed:

- i) The commitment to avoidance and mitigation prior to allowing consideration of offsets is unambiguous (Section 4.1, p.5-6). However, it is unclear exactly what standard of proof is required to demonstrate that “all reasonable measures” have “been taken to avoid and mitigate impacts on MNES” (p.9). Clarification of this point would provide the desired certainty.
- ii) The Policy acknowledges uncertainty, and provides a commitment to “effectively manage the risk of the offsets not succeeding” (p.4, Box 1). However, how this risk is to be managed is unclear, and no practical examples are provided to illustrate how this uncertainty will be addressed (e.g. by imposing risk or uncertainty premiums on offsets) (Moilanen *et al.* 2009). Proposed losses are largely immediate and guaranteed, but predicted gains from habitat rehabilitation, restoration or regeneration are uncertain and may not be achieved for a long time into the future, if at all (Bekessy *et al.* 2010). The science of habitat restoration is in its infancy and there are substantial limitations and uncertainties in our ability to restore ecosystems. This Policy has not clearly articulated the methodology that will be employed to manage uncertainty and is therefore impossible to assess in its current form.
- iii) The Policy draft does not contain adequate detail on the auditing and enforcement regime that will apply to offsets. The consequences for failing to meet offset requirements are not made clear. Neither is it specified which parties will bear the risk and consequences of failure. Thus there is no guarantee that the consequences of offset failure will not be borne by the environment and community.
- iv) Figure 1 (in the Policy document) outlines a decision process for determining when offsets are appropriate. However, all decision paths eventually lead to the same

outcome; namely, that the decision to approve (or not) an action is made at the discretion of the Minister after considering the feasibility of offsets in the broader socio-economic context. This process allows approvals to be granted in situations where impacts are likely but will not be offset. In addition, the offset policy applies only if it is determined that a significant residual impact is likely. The cumulative effects of many individually non-significant residual impacts can lead to large losses in biodiversity ('death by a thousand cuts'). The Policy should aim to offset all residual impacts, whether they are deemed significant or not.

- v) The Environmental Offset Assessment Guide (Appendix 1) does not provide adequate methodological guidance and detail on how offsets are determined. Taking each of the components of the Assessment Guide in turn:
 - a. The Impact Calculator appears to only address direct impacts on the protected matter and no mention is made of indirect impacts. This seems to be at odds with "Significant impact guidelines 1.2 – Actions on, or impacting upon, Commonwealth land and Actions by Commonwealth Agencies".
 - b. The category descriptors for 'duration of impact', 'condition of habitat impacted' and 'type of habitat impacted' are vague, ambiguous, context dependent and underspecified.
 - c. The list of factors that influence impact points is incomplete. In particular, there is no factor to account for the spatial attributes and landscape context of the impacted habitat. Spatial attributes refers to characteristics such as the size, shape, orientation, spatial configuration and juxtaposition of the impacted habitat. These spatial features have a bearing on population processes, susceptibility to degradation/disturbance and species persistence. The landscape context (setting) of the impacted habitat plays a role in providing or supporting ecological processes, particularly processes such as connectivity and buffering that maintain species/populations (see Chee *et al.* 2011 for further details).
 - d. It is not clear how Impact Points are calculated (e.g. Summed? Multiplied?)
 - e. There is a lack of consistency and coherence between the Impact and Offset Calculators. For instance, the Impact Calculator factors in the conservation status of the protected matter, but this is not reflected in the Offset Calculator. The Offset Calculator awards points for connectivity but landscape context is not a considered factor in the Impact Calculator.
 - f. Terms used in the Offset Calculator are undefined or poorly defined. For instance, 'offset points' are not defined. As there is no reference to ecological features and/or processes, it is difficult to know whether offset points will adequately represent environmental objectives, and can be measured. It is also unclear what constitutes "standard points", "various points", and "bonus points". It is unclear what "contribution to a wildlife corridor or other connectivity (e.g. proximity to NRS) for the protected matter" means in practical terms.
 - g. Actions to earn Direct Offset Points are applied to different entities, act on varying timeframes, have different predicted conservation values and different likelihoods of

success. Despite this complexity, the Offset Calculator does not indicate exactly how these actions will be weighted. In particular, there is no explicit consideration of weighting of rare and threatened species and ecosystems. To ensure that candidate offsets are “in proportion to the level of statutory protection of the affected species or community” (Section 6.13, p.13), high conservation status species and ecosystems should become more difficult and costly to offset. This relationship is not reflected in the Offset Calculator and should be addressed.

- h. Actions to earn Indirect Offset Points are particularly vague, ambiguous, context dependent and underspecified. The rationale for allowing 75% of Offset Points to be earned from direct offsets and 25% from indirect offsets is not explained and it is unclear under what circumstances indirect offsets are acceptable. The Offsets Calculator indicates that indirect offsets should only be considered in the event that it is not possible to offset 100% of the impact using direct measures, but this is not clear in the Policy document. The effort required when aiming to achieve 100% offsetting is unclear.
- i. Some of the indirect offsets listed in the Offset Calculator are not targeted at environmental benefits. Social benefits are welcome, but should not be considered as substitutable for direct environmental benefits. Allowing 25% of total required offsets to be fulfilled via indirect offsets will put threatened species and ecosystems further at risk because these will be the ones for which direct offsets are most difficult to secure.
- j. The Decision Ribbon does not appear to take uncertainty into account in any of its components. This is at odds with the stated policy commitment that “A suitable offset must effectively manage the risk of the offset not succeeding” (Section 6.1.4, p.13).

We recommend:

- A. That the Policy set out the standard of proof required to demonstrate that “all reasonable measures” have “been taken to avoid and mitigate impacts on MNES” (p.9). As part of this standard, minimum survey protocols should be specified to ensure that expended survey effort is adequate to detect threatened species and determine likely impact (Garrard *et al.* 2008).
- B. That the offsets Policy incorporate a risk ‘premium’ to account for the range of uncertainties that might induce offset failure. Accepting the use of offsets that rely on habitat rehabilitation, restoration or regeneration, means that the public is in effect, underwriting an ecological loan which may only be repaid many years later (or not at all). Given the range of uncertainties, responsible holders of this ecological debt should require a significant risk premium. In other words, the required size of offsets must be set so as to effectively buffer debt holders against uncertainties (Chee *et al.* 2011). Moilanen *et al.* (2009) provides an uncertainty analysis framework for calculating robust offset-to-impact ratios that would guarantee a high probability of ensuring that offset areas produce at least as much conservation value as is lost from impacted areas. An alternative to the use of uncertainty premiums is to require that offset

'credits' be generated, verified and banked (i.e. a 'biodiversity bank') before any impacts are permitted (Bekessy *et al.* 2010).

- C. That the Policy document specifies both the measurement, monitoring and reporting regime, and the auditing and enforcement regime. This should include the consequences for not complying with offset regulations and agreed outcomes, and specify the parties accountable in the event that offset requirements are not met.
- D. That Figure 1 is revised to ensure that the offset Policy applies to all actions for which there will be a residual impact and strengthen the Policy against loopholes that would allow for an impact to be incurred in the absence of an adequate offset.
- E. That the Impact and Offset Calculators be developed to a level of quantitative sophistication where they can be applied to trial case-studies. This will require that both Impact and Offset Calculators are revised (or redeveloped) to address all the shortcomings we identified in 2(v), and are properly quantified, with explicit assumptions and reference to existing approaches. This novel methodology must then be submitted to the scientific peer review process for assessment.
- F. That social and economic factors are **not** embedded in the assessment of offsets. As this is an Environmental Offsets Policy, social and economic factors should be considered separately to make tradeoffs with environmental factors more transparent.

3) The Environmental Offsets Policy Consultation Draft aims to “*deliver improved environmental outcomes by consistently applying offsets policy*”

A consistently applied offset policy does not necessarily result in improved environmental outcomes unless offsets are demonstrated to deliver improved environmental outcomes. Section 6.1.5 states that “offset requirements will need to include clearly articulated measures of success that are linked to the purpose of the offsets and provide clear benchmarks about their success or failure” (p.15). Consistent guidelines for setting the ‘purpose’, ‘measures of success’ and ‘clear benchmarks’ for offsets are thus critical.

We recommend:

- A. That evidence required to demonstrate that offsets are an effective policy instrument for delivering “an overall conservation outcome that improves or maintains the viability of the aspect of the environment that is protected by national environment law and affected by the proposed development” (p.4, Box 1) is assembled and reviewed.
- B. That clear guidance and protocols be provided to assist setting the ‘purpose’ for offsets, their ‘measures of success’, and targets or ‘benchmarks’. To ensure the monitoring and evaluation program is able to assess offset success or failure, it is critical that:
 - i) The conservation targets (or benchmarks) are defined in relation to a spatial and temporal scale;
 - ii) The level of confidence required to determine success or failure in relation to the target is specified;
 - iii) These targets are associated with environmental processes that can be quantified, such that the ‘environmental value’ of offsets can be measured; and

- iv) The sampling methodology in a monitoring and evaluation program is sensitive enough to detect progress toward offset targets.
- 4) The document aims to “explain the Government’s position on a range of issues, including: a. when it is appropriate to consider offsets as part of a project; b. the appropriate nature and scale of offsets, and; c. the use of market-based instruments for the delivery of offsets”**

In addition to the comments and recommendations above, we would like to add the following points:

- i) There is a potential basic logical flaw in allowing acquisition/covenanting as an offset. The Policy explicitly states that “Offsets must deliver a conservation outcome that would not otherwise occur” (p.13). This means that candidate offsets should only qualify or count as offsets if they are demonstrably under threat from environmental and/or anthropogenic stressors. Otherwise, the overall outcome is a net loss of conservation value (Bekessy *et al.* 2010). The Policy stipulation that candidate direct offsets be “protected in an enduring way and is actively managed for long-term conservation purposes” (p.13) is important, but unless it is made clear that this refers to candidate direct offsets that are demonstrably under threat from environmental and/or anthropogenic pressures, the Policy will not satisfy the principle that offsets “deliver a conservation outcome that would not otherwise occur”.
- ii) It is unclear why all residual impacts, whether deemed likely to have a significant impact or not, are not offset (Figure 1, p.8). Introducing the possibility of offsetting some residual impacts, but not others, creates the problem of how to determine when residual impacts are sufficiently small such that an offset is deemed unnecessary.
- iii) The use of market-based instruments for the delivery of offsets is in itself not a bad idea. However, in endorsing the use of market-based mechanisms and third parties to deliver offsets, the Policy does not provide any evidence or cite any reference regarding the effectiveness of these mechanisms. The relevant section (8.1), also fails to acknowledge that there is currently a lack of consensus about whether “market mechanisms help drive the most efficient pathway” (p.18) in either biodiversity conservation (Schilizzi & Latacz-Lohmann 2007), or precursor markets (e.g. atmospheric gases, Carlson *et al.* 2000).
- iv) The Policy document has not specified the regulatory framework that would govern the use, management and oversight of market-based instruments and third parties to deliver offsets.

The associated recommendations are as follows:

- A. Offsets are restricted to areas that are either demonstrably under threat from environmental and/or anthropogenic pressures, or require rehabilitation, restoration or regeneration of existing degraded habitat and re-establishment of habitat (Bekessy *et al.* 2010).
- B. All residual impacts should be offset to help avoid problems associated with cumulative impacts (‘death by a thousand cuts’) and uncertainty around how to determine when residual impacts are sufficiently small such that an offset is deemed unnecessary.

- C. A review of the effectiveness of market-based mechanisms is discussed and referenced.
- D. That the Policy clearly sets out the regulatory framework that would govern the use, management and oversight of market-based instruments and third parties to deliver offsets. Doing so will help provide better guidance and greater certainty to all stakeholders as well as help ensure consistency, transparency and accountability in the use of these mechanisms for offset delivery.

CONCLUSION

This Policy Draft represents an attempt to provide a clear and transparent framework for offsetting to increase certainty for the environment, society and economic development. At present, it does not meet this objective. Our submission supports the intention to develop an Environmental Offsets Policy that provides a scientifically defensible, transparent and accountable framework to assist decisions about offsets. We provide specific recommendations about how the Policy could be improved, and many of these suggestions are crucial to ensure the aims of the Policy are met. Given the significant changes needed to ensure that the Policy meets its objectives, we strongly recommend another round of public consultation after this Policy is revised.

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