

WWF Submission on the EPBC act environmental offsets policy consultation draft

WWF has strong concerns with the proposed policy.

WWF agrees that the principles outlined in Box 1 are essential for any offset regime, but is concerned that the actual policy as proposed undercuts those principles.

Moreover despite the high principles espoused, abundant peer reviewed scientific evidence shows, in practice, that offset programs have generally failed to deliver the conservation outcomes claimed giving us little confidence that this policy will fare any better (Turner *et al.* 2001; Robertson 2004; Hayes & Morrison-Saunders 2007; Burgin 2008; Kihlslinger 2008; Walker *et al.* 2009).

The US Wetland Mitigation Bank has run for nearly 30 years and it has resulted in 80% net loss of wetlands in the US due to failures of basic design, monitoring and enforcement (Ambrose *et al.* 2001, Turner *et al.* 2001, Kihlslinger 2008). Habitat Conservation Plans under the US Endangered Species Act exchange increased legal protection of existing endangered species habitat for habitat destroyed, resulting inevitably in net loss of habitat or “permanent drawdown” (Bekessy *et al.* 2010).

Exactly the same flawed “net loss” approach is advocated in this discussion paper and draft policy, while none of the critical scientific literature is referenced.

In particular, the list of activities recognised as offsets in the policy includes actions that can only result in permanent net loss of habitat or that provide no genuine offset whatsoever:-

- p6: “protecting existing good or better quality habitat.” As Bekessy *et al.* (2010) show, such an activity is not an offset because it is not additional. Moreover, acceptance of such false offsets can only lead to net loss of habitat or “permanent drawdown”. Existing habitat should already be protected by the EPBC as is the equivalent habitat to be destroyed by the development. Hence there is no additionality by putting an additional layer of protection over already suitable and therefore protected habitat. By doing this and then allowing other suitable habitat to be destroyed inevitably results in net loss of habitat violating the first principle of the policy that the offset “improves or maintains the viability of the aspect of the environment that is protected by national environment law”.
- p 7 Indirect offsets: “implementing priority actions outlined in the relevant recovery plans” This can only be equivalent as an offset to the extent recovery is shown to be achieved by undertaking the action, despite the destruction of intact habitat
- p 7 “enhancing habitat quality or reducing threats to the protected matter on a site that is not part of the direct offset, for example by removing invasive species” In which case this second site could in



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in fact be providing a direct offset, not an indirect offset. An example of a potentially valid (ie no net loss) indirect offset however might be if an expanding port could offset their destruction of seagrass (food of MNES green turtles and dugongs) by a proportionate buyout and retirement of grazing lands in the catchment known to be highly erodible thus contributing large amounts of sediment to the marine environment. This would pass the additionality test because livestock grazing as an ongoing activity is not regulated by the EPBC. The problem with such indirect offsets is ensuring proportionality. We cannot be confident that reducing sediment loads by a given amount will result in the recovery of seagrass equivalent to the area being destroyed. The uncertainty might however be accommodated by applying risk buffers to the offset, essentially over-engineering the area retired from grazing to give us sufficient 95% confidence that we have reached equivalent levels of habitat recovered to that destroyed.

- p7 “contributing to relevant research or education programs.” Mere knowledge and education provides no genuine offset whatever and necessarily results in net loss. WWF opposes this ever being accepted as an offset, as it violates the first principle of the policy.

Only p 6 “rehabilitation of existing vegetation in poor condition” or “revegetation of environmentally degraded land” or p 7 “enhancing habitat quality or reducing threats to the protected matter” can achieve no net loss in the long term. Even with such offsets, however there is nonetheless a “temporary drawdown” or net loss until such time as the offset site matures to the same condition as the intact habitat destroyed (Bekessy et al. 2010).

The draft policy states that offsets are not intended to allow an action with unacceptable impact to proceed. But the policy offers no clear and scientifically supported thresholds for whether an impact on a matter of national environment significance (MNES) is acceptable or significant.

Surely any residual impact on an MNES like an endangered species, if it is sufficient to require an offset, should be considered unacceptable.

The government always has the ability to refuse approval to projects which result in such impacts, such as the Traveston Crossing Dam. This should be the bottomline of the EPBC Act.

The draft proposes that offsetting should occur of all “residual” impacts not just for those impacts considered significant. This assumes that the approving agency can and has quantified the impacts reliably and has quantified the quantitative reduction in impacts due to mitigations also reliably enough to even be able to estimate residual impacts. This is almost never the case. Most offsetting is based on coarse qualitative arguments and proxies, and lacks any standard currency that is truly and accurately representative of all levels of biodiversity.

Some sources argue that using offsets can provide a cost-effective method of protecting biodiversity by allowing for flexibility in meeting environmental objectives by incorporating costs into environmental decisions (Kate et al 2004).



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The validity of this argument relies on some critical assumptions and tests being met:

- quantifiability
- interchangeability or equivalence
- no net loss
- additionality
- enforcement and monitoring.

(Gibbons & Lindenmeyer 2007; Burgin 2008; Bekessy *et al.* 2010)

Quantifiability

The latest review of biodiversity offset and compensation programs worldwide, does not quantify biodiversity gained or lost under those programs, only coarse proxies like areas. This highlights the great difficulty in quantifying the true impact of offset programs on biodiversity and the absence of a common currency (Madsen *et al.* 2010).

Biodiversity is not readily quantifiable compared with other environmental properties like pollution (Landell-Mills & Porras 2002). This is due to the fact that biodiversity is a complex phenomenon with a number of different levels – genetic diversity, species diversity, and ecosystem diversity. There is no single currency of biodiversity that encompasses all three recognised levels. It is not measurable by simple statistics like Diversity or Richness indices, which are limited to just one level of biodiversity – the species level- and are highly sensitive to area being sampled.

The “impact points” proposed in the draft are clearly going to be qualitative guesses, and do not represent a reliable stable currency of biodiversity.

One scientifically valid common currency of biodiversity impact is extinction risk, but even this is notoriously difficult to model and estimate through population viability analysis, even with good life table data (Brook *et al.* 2002).

Another approach “habitat hectares” attempts to derive total area of habitat weighted by quality, as a currency, but had been criticised for its subjectiveness and incompleteness (McCarthy *et al.* 2004).

Equivalence

Equivalence or interchangeability of biodiversity requires setting a threshold for equivalence. Even small patches of habitat next to one another in detail are not interchangeable or equivalent, since they hold a unique and dynamically changing combination of species, genotypes within species, and ecological connections unlikely to naturally occur or persist in that peculiar mixture at any other site on earth at the same time.

Schemes that do require no net loss, will also require that new habitat be created or restored at sites where it used to occur but has already been destroyed, or where it could feasibly exist with enough investment in establishing it.



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Hence this assumption is not simply that two patches of habitat are equivalent in their mature, natural or pristine form, but that pristine habitat is or will be equivalent to restored or engineered replacement habitat. Hence the entire concept of offsets relies to a great extent on there being a legacy of destruction of habitat, thus meaning that it can be restored where it was previously lost before an offsets policy became law.

The empirical record shows that recreation of ecosystems with all component species and functions has proven illusory and where attempted, prohibitively expensive (Wilkins *et al.* 2003; Hilderbrand *et al.* 2005).

The cheaper and most secure option is simply not to destroy intact endangered habitats in the first place.

Moreover, even if a site were found to be interchangeable at a certain threshold of tolerance with another site in whatever biodiversity currency is chosen, it is unlikely to long remain so, especially as entire ecosystems shift and reassemble under climate change. Any given offset is unlikely to be recognisably the same as the area destroyed within even a 50 year time frame. Strictly speaking it is impossible to find any real offset for biodiversity destroyed that remains stable in ecological time.

Another important aspect of equivalence is dealing with the uncertainty that the offset may fail to ever recover to the point it is equivalent to what was destroyed. The usual approach is to include risk buffers to cover this uncertainty.

No net loss

As mentioned, offset sites must be at an immature, not at an intact stage, for there to be no net loss. They will not reach the same level of maturity until many decades after the habitat it is assumed to replace was destroyed. This means that even assuming the equivalence were achievable, there would still be many years or decades of net loss, and until equivalence itself can be demonstrated (Bekessy *et al.* 2010). Offsets should be in place prior to any works which destroys the values being offset. The recent approval for dredging in Gladstone harbour allowed dredging to go ahead and destroy many hectares of seagrass before a concrete package of offsets was approved. Approvals should only be given once a transparent package of offsets and rationale for offsets has been made public.

The commonest design flaw in offsetting is to “protect” already existing habitat as an offset for other equivalent existing habitat which is destroyed immediately, resulting in a net loss of habitat, whatever the net gain in protection of the habitat might be, which goes to a separate question of additionality. Offsetting schemes following this approach necessarily result in net loss of biodiversity (Bekessy *et al.* 2010). The EPBC Act is already supposed to provide a layer of protection over all habitat for MNES. Hence there would be nothing to gain by merely once again adding a second layer of protection of intact habitat as an offset for destruction elsewhere.

Additionality

Even assuming that all other assumptions have been met, a basic question to be asked is if the site chosen as an offset (which to satisfy no net loss principle, must not yet have reached maturity or have yet recovered to the point of being equivalent to the habitat being destroyed) would have simply naturally recovered to the same point of equivalence in the absence of any offset. The act of offsetting must guarantee that the offset



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site will recover to the point of equivalence with the habitat it is replacing, and that it will remain viable as a replacement indefinitely. This requires two things:- first that the current land use means that potential, recovering or regrowing replacement habitat is likely to be cleared, degraded or destroyed unless the offset comes along to save it, and second that the offset secures it as a protected area in perpetuity, free of further risk of destruction.

Merely putting a covenant over an offset area does not provide that guarantee in law. For example, the Bimblebox Nature Refuge in Queensland was purchased with federal government assistance in 2003 as an IUCN category IV nature reserve. The Queensland Government subsequently gazetted it as a nature refuge. Despite this illusion of protection, the same state government later issued a mining exploration permit, which is now being developed into the Waratah Coal Mine, a mine that will wipe out over half the nature refuge.

Evidently if an offset in Queensland is “protected” as a nature refuge, it is not “protection” at all, since it can still be destroyed by yet further development.

Any offsetting program would have to avoid this risk of double jeopardy by securing offsets as national parks or other reserves where any further development rights including mining are permanently extinguished.

Enforcement

Walker *et al.* (2009) argue that agencies are under immense political pressure to facilitate resource development. In contrast there is much less countervailing pressure to achieve true protection of biodiversity because usually there is no vested interest.

Even assuming all the other assumptions can be met, the success of offsets depends crucially on followup monitoring and verification that the offsets are doing what they were supposed to do, and enforcement of contracts where they are shown not to be doing so.

Unless offsets are backed up by well-funded and effective compliance and monitoring by the approving agency, they may well fail and we would be one the wiser.

Conclusion and recommendations

Biodiversity loss resulting from land use change caused by mining, forestry, agriculture, and development is occurring and will most likely continue to occur with or without offsetting the adverse impacts due to strong political and economic pressures. At least offsetting carries the hope of making developers compensate for what they are destroying. But if this results in net loss of habitat, and MNES declining even faster toward extinction, the basic purpose of the EPBC has been violated.

If the government is intent on allowing proponents to offset the destruction of MNES, then a much stricter policy this is needed:-

1. DSEWPAC before committing to a full scale policy needs to run a scientifically properly designed pilot experiment with followup evaluation and monitoring to verify objectives were achieved.



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2. Offsets should deal with residual impacts after mitigation and avoidance and cumulative impacts. All these types of impacts – cumulative, offsite, mitigated, avoided and residual--- should be quantified in a scientifically credible currency like risk of extinction or habitat hectares, for the species of national significance using a transparent and publicly accessible justification. Current EPBC implementation is lacking in scientific rigour in terms of showing that proposed mitigation and avoidance activities actually will mitigate and avoid the impacts they say they will.
3. Impacts to be offset must be required to include residual impacts outside the footprint of the project due to edge effects, fragmentation, change in hydrology, air and water pollution and potentiation of threatening processes like fire or invasive pests and diseases.
4. Any EIS must also evaluate risk to other matters that might be driven into EPBC threatened status by the action itself, in addition to cumulative actions in the same habitat.
5. EPBC policy that wraps around offsets must include an explicit quantitative threshold for residual impacts, and if impacts rise above this threshold such as by reducing predicted extinction time below 100 years, the project should be rejected without any offset.
6. In searching for an offset site, the site must already have been degraded or cleared. Added protection of intact existing habitat cannot be considered additional. Offsets of this kind necessarily result in net loss of habitat in violation of the first principle of the policy. Indirect offsets might be valid if it can be clearly shown that the activity actually abates the risk of extinction proportionate to the extent that the action increases it, plus risk buffers sufficient to cover any uncertainties in these estimates.
7. The proposed offset must be shown by modelling to be highly likely, with 95% confidence, to provide viable and ecologically equivalent replacement habitat, factoring into account species and ecosystem range shifts under a changing climate over at least a 100 year time frame as well as other knowable uncertainties.
8. The offset must be demonstrated to be truly additional, with an explicitly quantified probability of the offset area naturally maturing into viable restored habitat in the absence of any offset funding or activity versus the probability of doing so with the offset arrangements in place.
9. The offset must be secured and operational before works can commence with complete public transparency about where it is and what it does to minimise the temporary net loss that exists up until the time the offset matures to the point it is equivalent to the lost habitat.
10. There must be substantial risk buffers of at least 2 to 10 times the area being offset, accommodate the uncertainties in modelling the impacts and the risk that the base offset will actually rise to and maintain ecological equivalence with the habitat being destroyed. This uncertainty must be specifically quantified in the EIS.
11. The offset must be secured in perpetuity as a protected area with all future threats, particularly mining, shown to be extinguished.



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12. There must be no offsets that are based purely on research or education and which do nothing to actually restore habitats.
13. Offset proposals must include a fully costed and funded long term monitoring and auditing plan to demonstrate that the offset is achieving the equivalence it was intended to achieve.



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