

## POLICY PERSPECTIVE

# Interactions Between Biodiversity Offsets and Protected Area Commitments: Avoiding Perverse Outcomes

Martine Maron<sup>1</sup>, Ascelin Gordon<sup>2</sup>, Brendan G. Mackey<sup>3</sup>, Hugh P. Possingham<sup>4</sup>, & James E. M. Watson<sup>1,5</sup>

<sup>1</sup> School of Geography, Planning and Environmental Management & Centre for Biodiversity and Conservation Science, The University of Queensland, Brisbane, QLD 4072, Australia

<sup>2</sup> School of Global, Urban and Social Studies, RMIT University, GPO Box 2476, Melbourne, VIC 3001, Australia

<sup>3</sup> Griffith Climate Change Response Program, Griffith University, Gold Coast City, Parklands Drive, Southport, QLD 4222, Australia

<sup>4</sup> School of Biological Sciences & Centre for Biodiversity and Conservation Science, The University of Queensland, Brisbane, QLD 4072, Australia

<sup>5</sup> Wildlife Conservation Society, Global Conservation, 2300 Southern Boulevard, Bronx, NY 10460, USA

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## Correspondence

Martine Maron, The University of Queensland, School of Geography, Planning and Environmental Management & Centre for Biodiversity and Conservation Science, Brisbane, Queensland 4072, Australia.  
Tel: +61 7 3365 3836; fax: +61 7 3365 6899.  
E-mail: m.maron@uq.edu.au

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## Abstract

Economic growth is often in conflict with environmental goals. Biodiversity offsetting attempts to resolve this conflict by requiring industries to compensate for the biodiversity loss they cause, by generating an equivalent biodiversity gain elsewhere. Offsets for environmental impacts are increasingly being seen as a way to help meet preexisting conservation targets, such as those relating to the establishment and management of protected areas. We examine how using offsets to meet a state or organization's genuine commitments, which are not contingent on the offsets, results in no additional conservation benefit. In this case, either the offset or the preexisting commitment is invalid. For example, the use of offsets to meet commitments under the Convention on Biological Diversity requires an admission that those commitments would otherwise not be met. This interaction between international agreements around protected areas and offset policy can generate perverse incentives, which must be carefully managed to avoid poor conservation outcomes. We propose separate accounting for conservation gains generated using offsets, and that future conservation agreements and targets should explicitly separate commitments met using offset gains from those which are not reliant on equivalent losses.

## Introduction

Biodiversity offsets involve compensating for biodiversity loss in one location by generating an equivalent biodiversity gain elsewhere. The concept has been rapidly and widely adopted with at least 37 nations now having formal policies specifically requiring or enabling the use of offsets (Pilgrim & Bennun 2014), along with regulations in many provincial and local government jurisdictions. Major players in several industries have also embraced voluntary offsetting as a way to build their social license to operate (Rainey *et al.* 2015).

Increasingly, the introduction of biodiversity offsets to the environmental policy space is raising challenging issues. A key debate concerns the validity of using offsets

to help achieve national targets to which nations have committed under the Convention on Biological Diversity (CBD; Pilgrim & Bennun 2014; Githiru *et al.* 2015; Maron *et al.* 2015b). The focus of debate thus far has been targets relating to the extent and management effectiveness of protected areas (Aichi Target 11), but the central issue extends to others, such as the restoration of 15% of degraded lands (Aichi Target 15).

For the purposes of this discussion, we focus on Aichi Target 11. This requires the CBD's 196 parties to, by 2020, effectively conserve 17% of terrestrial and 10% of marine realms in areas that are "important" for biodiversity, ecologically representative and connected (CBD 2011). While the national-level percentage targets for areal extent of protected areas vary, and some countries

have met or exceeded their area target, the element of Aichi Target 11 requiring that those protected areas be “effectively managed” remains a challenge for many countries (Watson *et al.* 2014, 2015; Butchart *et al.* 2015).

Offsets that create new protected areas, fund the management of existing protected areas and restore degraded ecosystems are already occurring in many parts of the world (Brownlie and Botha 2009; McKenney and Kiesecker 2010; Bos *et al.* 2014; Villarroya *et al.* 2014). Proponents of the use of offsets as a funding mechanism for achieving such protected area targets point to the slow progress of many nations toward meeting the targets (Watson *et al.* 2014) and the widespread inadequacy of funding for protected area management (McCarthy *et al.* 2012; Githiru *et al.* 2015; Kiesecker *et al.* 2015). Critics emphasize the risk of cost-shifting: using offsets to replace expenditure toward already-agreed targets, thus failing the requirement that offset gains are additional, and resulting in net biodiversity loss (Pilgrim and Bennun 2014; Gordon *et al.* 2015).

The issue of how offset validity is affected by existing commitments around protected areas has to date been only briefly touched upon in offset guidelines (e.g. IUCN 2014). However, offsets are increasingly being applied to fund the creation or management of protected areas without agreement on how they can, or should, validly be used (IUCN 2014; Pilgrim and Bennun 2014). In a recent publication (Maron *et al.* 2015b), we contended that biodiversity offsets can contribute to boosting protected area coverage and management, but that because of the requirement that offsets generate benefits additional to those that would otherwise have occurred, the use of offsets to meet preexisting commitments is valid only if there is no intention otherwise to meet those commitments. In this *Policy Perspective*, we extend this argument, and explain the ways in which offsets differ from other forms of conservation finance. We then describe several responses to reduce the risk of perverse outcomes from the interaction between existing commitments and offsets.

We constrain our discussion to “no net loss” biodiversity offsets. No net loss as an offset goal requires that the biota targeted by the offset exchange—such as particular species or ecosystems—is not diminished in net terms compared to what would have occurred without the impact and the offset (Maron *et al.* 2013). Alternative goals for biodiversity offset outcomes exist (Brownlie and Botha 2009), but best practice offsets are widely considered to require achievement of at least no net loss (ten Kate *et al.* 2004; IUCN 2014). The goal of “net gain” or “net positive impact” is also commonly cited in policy (McKenney and Kiesecker 2010) and our

arguments apply equally to this approach. If an offset is intended to achieve a net gain, but that gain would otherwise have occurred without the offset because of prior commitments, then the key requirement of additionality has not been met.

## Offsets are a unique form of conservation finance

The conceptual basis of offsets sets them apart from other types of conservation tools in ways that are not intuitive (Bull *et al.* 2013). They are not the standard conservation activity where the foremost objective is to maximize benefits for biodiversity, nor are they a “payment for ecosystem services” (PES) scheme, which provides payments to landowners to avoid certain land uses such as logging or converting natural ecosystems to intensive land uses. Rather, they involve counterbalancing the loss of a *specific amount and type* of biodiversity, the residual impact after appropriate avoidance, minimization and on-site rehabilitation measures have been taken. As such, some argue it is an example of a “strong sustainability” approach (Quétiér *et al.* 2014).

Biodiversity offsets therefore have the unique feature that resulting conservation gains are directly tied to equivalent losses, which has two important consequences. First, the conservation outcome of a soundly-executed “no net loss” offset exchange is, by design, neutral at best and cannot be construed as a conservation gain (Gordon *et al.* 2015). Second, if a “no net loss” offset action falls short of expected conservation benefits, then the net result of the impact and the offset is always a loss of biodiversity. This is in contrast to other conservation activities, where a shortfall in conservation benefit does not imply a direct loss, but merely an unrealized benefit.

Other sources of conservation finance, such as taxes and levies, are collected without any claim that they will achieve a specific and attributable net outcome. Taxing industries that damage the environment and using that money to pay for conservation actions is a reasonable way to move the cost burden away from the public (Hardner *et al.* 2015), consistent with the “polluter pays” principle. However, in this case the payment of the tax does not enable claims about specific impacts being offset. Offsets, in contrast, are designed to achieve a specific net outcome, so the expectations set by claiming an offset has been done differ fundamentally. By conducting a fair, robust offset, a company (for example) is purchasing the right to claim that they are responsible for no net environmental impact. Offsets are thus potentially powerful tools for generating social license to operate. But if those offset gains are used to acquit one debt, they become

unavailable for acquitting another. In other words, they cannot be double-counted.

## Counterfactual scenarios

For a given biodiversity offset action to generate a gain that can then be used to counterbalance a loss, it must improve biodiversity outcomes compared to what would have occurred without the offset (Maron *et al.* 2013). Only biodiversity gains over and above this counterfactual scenario can be considered “additional” and thus be exchanged for biodiversity losses elsewhere. The use of a counterfactual scenario that overestimates biodiversity loss without the offset will overestimate the gains from the offset, allowing a larger impact to be permitted in exchange for the offset. This results in net biodiversity loss from the offset exchange (Gordon *et al.* 2015). Therefore, a fair and plausible specification of the counterfactual scenario must be fully consistent with genuine future intentions and agreed actions. Accordingly, for offset gains to be additional, by definition they must be a *deviation* from those future intentions. In other words, offset actions do not result in true gains if those actions were already intended (Maron *et al.* 2013).

National Biodiversity Strategic Action Plans (NBSAPs) are core to the implementation of the CBD’s Strategic Plan for Biodiversity 2011–2020, thus forming “...the principal instruments for implementing the [CBD] at national level” (<https://www.cbd.int/nbsap/default.shtml>). The NBSAPs submitted by party nations to the CBD secretariat include national targets mapped against the Aichi Targets, including Target 11. These commitments are presented as genuine intentions, not merely aspirational goals, and are described by the CBD Secretariat as: “reflect[ing] how the country intends to fulfil the objectives of the Convention in light of specific national circumstances” (<https://www.cbd.int/nbsap/introduction.shtml>). The commitments are conditional for developing countries on the provision of adequate support (including financial support) from developed countries. Commitments for meeting Target 11, however, are not conditional on offsets generated from equivalent biodiversity losses.

## We cannot have it both ways

Establishment of new protected areas can validly be used as an offset, as can financing management of existing protected areas. However, any offset benefit is an admission of what was not otherwise intended. If offset activities involve actions that were already planned and not contingent on the offset, then those activities do not result in additional gains and therefore cannot be used to offset losses. It follows that using offsets to reach a preexisting

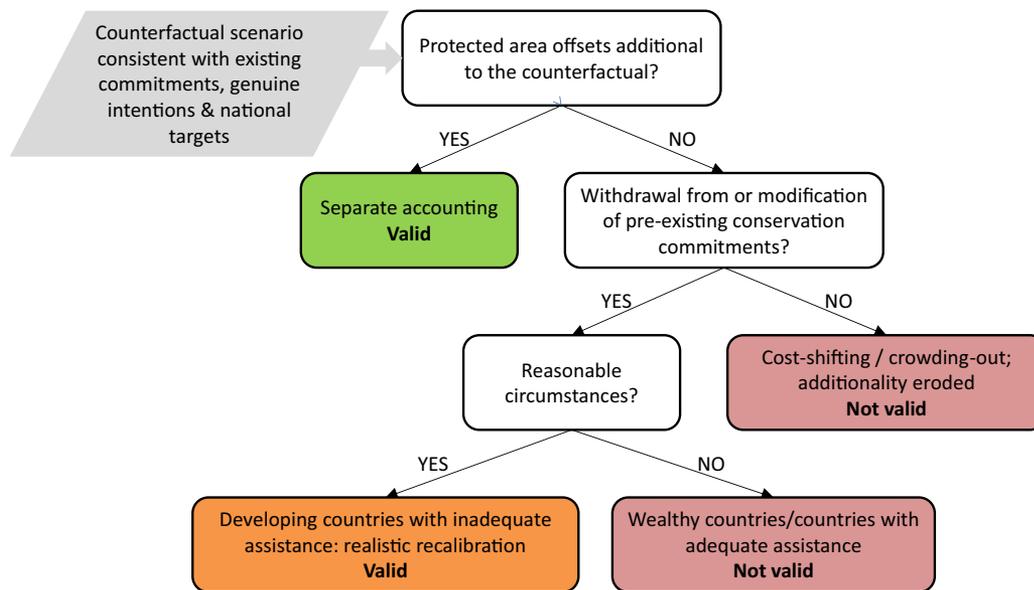
conservation target means that either there was no intention to reach the target or that the offsets are not valid (Maron *et al.* 2015b).

In the case of an offset funding a new protected area, the key question is: would this percentage increase in the national protected area estate have been otherwise achieved? Similarly, if the offset involves funding conservation management of an existing protected area, the question becomes: would this management have otherwise occurred? If the answer to these questions is no, then the offset is valid—but it reveals that these actions were not otherwise intended. If, on the other hand, the answer is yes, then the validity of the offset is called into question. This is perhaps more self-evident in the case of offsets that provide funding for protected area management than it is in the case of an offset site becoming a new protected area and considered to contribute to achievement of Aichi Target 11. Essentially, offsets used to generate new protected areas can be considered a form of leakage: even though that particular site may not otherwise have become protected without the offset, it means that another site that *would have* been protected to achieve the CBD target, may no longer be protected.

Where an offset exchange results in a new or better-managed protected area, there are four possible outcomes (Figure 1). If the offset benefits are accounted for separately to progress toward existing commitments, then the offset remains valid and the integrity of efforts to meet the commitments is maintained. However, if use of the offset benefits to achieve existing commitments is sought, then either the commitment is honored, in which case the offset is not valid (because it does not produce additional conservation benefits), or it is not honored, opening up the potential for the offset to remain valid, but representing a withdrawal from the preexisting commitment to meet a target. Such an outcome may be considered valid if the original commitment is no longer (or never was) realistic given in-country circumstances, or not valid, for example, where a wealthy country with the means to meet their commitments seeks to cost-shift by double-counting offsets.

## Perverse outcomes from policy interactions

There is potential for perverse outcomes from ostensibly beneficial conservation actions due to the interaction of international agreements around protected areas with the rapid adoption of offset policies. We focus here on two of the most concerning: manipulation of counterfactual scenarios; and cost-shifting. Both risks can be moderated, although not eliminated.



**Figure 1** Decision tree outlining potential consequences of using offset funding to fund the purchase and/or management of protected areas for countries with commitments to preexisting protected area targets.

First, since benefits of a given action are measured relative to a counterfactual, there is an incentive for that counterfactual to be manipulated. A pessimistic counterfactual scenario, for example, means a particular offset action would be considered to generate a greater amount of biodiversity gain, which can in turn be exchanged for a greater amount of loss (Gordon *et al.* 2015). Therefore, if governments have an interest in keeping the cost of offsets low, they may experience an incentive to invest less in other conservation actions that would improve the counterfactual scenario for biodiversity (Gordon *et al.* 2015). As a result, recognition that genuine offsets require a deviation from existing commitments may in fact incentivize withdrawal from such existing commitments, unless disincentives for withdrawal—such as reputational risks or fines—are strong.

Second, where the counterfactual scenario is not explicitly stated, there is a risk that benefits generated by offsets will be used in place of government investment that was either previously intended, or that would have been forthcoming had the alternative resourcing through offsets not become available (Pilgrim and Bennun 2014; Githiru *et al.* 2015; Gordon *et al.* 2015). The risk of such crowding out may be particularly strong where offsets are delivered through third parties and/or funds for their implementation are pooled with those from other sources, making separation of genuine gains from 'neutral' no net loss outcomes from offsets challenging. If offsets can fund the apparent achievement of the environmental goals of a government, the incentive to invest central revenue in

environmental outcomes is likely to be reduced (see discussion in Gordon *et al.* 2015).

The design of REDD+ schemes for carbon offsets has also needed to generate rules that make counterfactual scenarios robust to gaming (Venter *et al.* 2010). Responses have included the use of set national-level counterfactual scenarios of deforestation drawn largely from recent deforestation rates. While this reduces opportunity for counterfactual manipulation, it has been criticized as unrealistic and insensitive to likely future changes in deforestation rate (Angelsen 2008). Developing counterfactuals consistent with plausible futures remains a significant challenge (Sloan & Pelletier 2012) but it is an exercise critical to the success of offsets of all types.

The potential for gaming of counterfactuals in biodiversity offsetting is compounded by the fact that rarely is a higher-level reference scenario clearly and quantitatively articulated, and assessments of offset additionality are often made on a case-by-case basis. However, regional-scale cumulative impact assessments and strategic impact assessments increasingly are required where multiple developments are envisaged (Short *et al.* 2013). We propose that counterfactual scenarios, consistent with intended conservation actions as well as anticipated impacts for which no offsets are required, be developed at the same time, to facilitate decisions about offsets.

A core requirement for any counterfactual scenario is its consistency with other stated and genuinely intended future plans—excluding both the offsets themselves and, importantly, any actions which themselves would trigger

offset requirements. Greater transparency around counterfactual assumptions used for calculating offset benefit would therefore allow explicit comparison with the stated intentions of, for example, responsible governments (Gordon *et al.* 2015; Maron *et al.* 2015a). Should inconsistencies be revealed, the integrity of the offset requires them to be resolved, one way or another.

### Transparent accounting: A way forward

In many contexts, the most effective offsets will involve the generation and management of protected areas. No net loss policies, offsetting and other commitments such as those under the CBD can all work in synergy to achieve good conservation outcomes. For example, a hybrid scheme whereby developers must offset certain specific impacts but also pay a biodiversity tax, the use of which is more flexible, is one possible approach. But because of the differences we have outlined between offsets and other forms of conservation finance, the reporting and accounting of benefits from offsets must be managed carefully to minimize perverse outcomes. In our recent publication (Maron *et al.* 2015b), we proposed two responses, which we elaborate upon here. First, benefits generated by offsets should always be reported alongside the losses that triggered them, and not promoted in isolation. Second, accounting of benefits generated by offsets should be separated from those generated through other mechanisms. The interaction between several of the Aichi Targets and biodiversity offsets is opaque. As future commitments beyond 2020 are negotiated, we argue that explicit negotiation to determine acceptable use of offsets for achieving future targets is important, not least from the perspective of fairness. Clearly, the value of meeting a conservation target only by allowing equivalent losses is different from that of meeting the same target without those losses, and this should be recognized.

We propose that requiring the parallel reporting of counterfactual assumptions from which offset gains are to be measured alongside every offset may act as a check on undesirable behavior. This would make clear what was intended were the offset not to occur, allow cross-checking to ensure consistency with other relevant plans and commitments, and assist in monitoring the validity of each offset. Such an approach is consistent with those used in REDD+ whereby the counterfactual “reference” scenario of “what would occur” to forests without intervention is explicitly specified (Venter and Koh 2012).

Importantly, we recognize the reality that there are many nations that will continue to struggle to achieve their protected area commitments (Pilgrim and Bennun 2014; Watson *et al.* 2014). Such nations are often those where offsets are likely to be particularly important, as economically poor governments may not have the op-

tion to fund beneficial environmental actions. Pilgrim and Bennun (2014) propose the approach of “temporary additionality,” whereby less-developed nations may validly use offsets to fund more rapid progress toward their protected area commitments. However, it remains the case that for such actions to constitute genuine offsets, those governments must still openly admit that some of those new protected areas would not have been gazetted without the offset—an admission that, we argue, may sometimes be judged reasonable, such as where assistance from the global community has been inadequate (Figure 1). Importantly, for such judgements to be made by the international community, honest acknowledgement of the lack of intention to meet targets without offsets is required.

Governments often fail to meet targets set under international agreements. But they benefit, at least reputationally, from the appearance that they intend to meet their commitments. We argue that if this appearance is at odds with genuine intentions, then nothing is gained by merely keeping up appearances. Governments may prefer to use strategies such as ‘blame avoidance’ for policy failure, rather than directly address conflicts between policy objectives, thus avoiding domestic and international pressure and stymying progress toward environmental goals (Ongolo and Karsenty 2015). Demanding transparency about intentions is crucial to a clear understanding of the adequacy of conservation targets, and also has important implications for perceived fairness, which is critical to ensuring initial agreement and ongoing compliance with international agreements.

### Conclusion

As offsets increase in popularity with governments and developers globally, they are already being used to create new protected areas, manage those areas, and fund government-run conservation programs. Offsets are an increasingly significant source of conservation funding in some biodiverse developing countries (Quintero and Mathur 2011). Judgements by the international community about the validity of such actions will therefore have far-reaching consequences for the future of biodiversity globally.

We suggest that the conceptual basis of offsets—explicitly linking each unit of biodiversity loss to at least an equivalent gain—is essential to turning the tide of extinction and biodiversity decline. However, without a genuine balance sheet showing not just conservation wins, such as new protected areas, but the losses too (McDonald-Madden *et al.* 2009), we risk entrenching biodiversity losses while at the same time celebrating what we think are gains.

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