

Science for Environment Policy

Biodiversity offset policy: dangers that must be avoided

Biodiversity offset policies may inadvertently incentivise behaviours which actually accelerate biodiversity loss, new research has found. The study's authors identify four ways this can occur and make recommendations for prevention.

[Biodiversity](#) is declining worldwide. Much of this is the result of developments, from roads to buildings, which destroy and fragment habitat. 'Biodiversity offset schemes' — in which the developer creates, restores or protects habitats elsewhere — are intended to compensate for these negative effects, with the ultimate aim of achieving 'no net loss' of biodiversity.

However, concerns have been raised regarding these schemes, with some studies showing that [biodiversity is likely to be lost because the schemes are ineffectual](#), or that sites do not have long-term protection and therefore are only likely to achieve no net loss initially, and are then later degraded. For this study, researchers investigated the possibility that biodiversity offset policies, even if well designed and properly implemented, might result in 'perverse incentives', i.e. encouraging behaviours which actually result in a net loss of biodiversity. The authors identified incentives for:

1) *Entrenching or exacerbating baseline declines.*

In order to assess whether no net loss of biodiversity is achieved, a baseline must be set from which to measure biodiversity losses and gains. At the time when a development occurs, net biodiversity drops; the aim is that over time, as the offset site develops, this should return to the baseline. However, the outcomes for conservation could differ drastically, depending on where the baseline is set, and how it changes over time. If, for example, background levels of biodiversity are assumed to be declining rapidly, and this is used as the 'business as usual' baseline, then fewer gains are needed from the offset site. This is because the offset is only required to maintain the trajectory of declining baseline across the impact and offset sites collectively. This can then create a self-fulfilling prophecy: if biodiversity is assumed to be declining, offsetting does not need to achieve as much, and thus can entrench these assumed declines.

2) *Winding back other conservation actions.*

Other conservation initiatives essentially make offsetting schemes more difficult and expensive for the developer. If conservation programmes succeed in reducing biodiversity loss, this raises the baseline from which to measure biodiversity gains, making it more difficult to attain no net loss of biodiversity by offsetting. If a decision maker has an interest in facilitating development, there may be an incentive to advocate the use of overly steep declining baselines, as this reduces the required biodiversity gains and thus the expenses associated with offsetting activities. The offset policy then 'locks in' these declines. In addition, designating land as protected reserves also means it is not available for use as an offset site. Similarly, if conservation actions reduce the threats to populations of a threatened species, these can no longer be targeted under offset schemes as 'averted losses' — no loss is being averted if the species is not threatened and therefore not expected to decline.

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(continued)

3) *Crowding-out of conservation volunteerism.*

Volunteering has boosted conservation worldwide, and in some cases, volunteers have been invited to assist in offset actions. In a case in Australia, the outcomes of volunteer work to restore a park were used retrospectively as an offset for an urban development, but it was unclear whether the volunteers knew the conservation gains they were achieving were allowing equivalent destruction of biodiversity elsewhere. If offsetting projects redirect volunteer efforts from other conservation projects, the volunteers are then contributing to actions that would not have otherwise been required. This would also reduce the gains those other projects would have made, therefore exacerbating biodiversity loss.

4) *False public confidence in environmental outcomes due to marketing offset actions as gains.*

Conservation gains resulting from offset actions are often described as conservation gains in their own right. For example, the proposed UK biodiversity offset scheme was described by the government as "an exciting opportunity to look at how we can improve the environment as well as grow the economy". However, this is not the case. Offset schemes, even if they fully achieve their goal of 'no net loss', are not positive improvements but entirely neutral in terms of biodiversity gains. Describing offset schemes in this way could result in the public perception that offset activities are gains in their own right. This could then reduce public pressure on governments to invest in conservation, further eroding biodiversity and again representing a net loss.

To avoid these perverse incentives researchers recommend that the process to set the baseline should be reviewed every 10 years. However, as detailed in the first point, if schemes fail to achieve no net loss, the baselines may then be recalculated as steeper declines. This will mean that fewer gains are required from offset schemes, and biodiversity declines further. They also recommend that calculations for baselines, and the wider biodiversity declines from which they are drawn, should all be stated clearly. It may be useful to use a flat baseline, which would assume no background declines over time. Finally, they recommend better education and outreach regarding offset policies, that would help explain how offset activities are not 'conservation gains' but are making up for losses elsewhere and are thus neutral at best.

Readers interested in a comprehensive review of the technical and legal issues and [possible solutions relating to biodiversity offsets are referred to a recent review](#) supported by the European Commission¹.



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1. <http://ec.europa.eu/environment/nature/biodiversity/nnl/pdf/Biodiversity%20offsets%20metrics%20and%20mechanisms.pdf>