

Explainer

Target-based ecological compensation

Project 5.1



National Environmental Science Programme

Target-based ecological compensation is an alternative approach to biodiversity offsetting, where compensation is linked to national or sub-national biodiversity targets, associated conservation outcomes are transparent and clear, and the relative contribution of different sectors to achieving those targets is explicit.

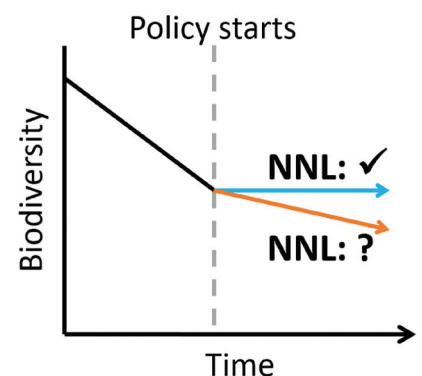
The current situation: Biodiversity offsetting

- Many governments and finance providers have policies and standards requiring that residual biodiversity impacts arising from projects such as new mines, infrastructure or housing estates are compensated with environmental benefits. This is widely known as biodiversity offsetting.
- Offsetting generally aims for "No Net Loss" (NNL) or "Net Gain" of biodiversity.
- In biodiversity offsetting, NNL is typically calculated relative to a "counterfactual scenario" – that is, what would have happened without a project and its offset. This contrasts with a more intuitive meaning of NNL – no further net losses of biodiversity compared to "now".
- Frequently, this counterfactual scenario is one of ongoing biodiversity loss. Since biodiversity was expected to decline anyway, the net outcome of an offset need only match that decline. This is still claimed as a NNL outcome by the proponent and its backers.

The challenge: Balancing development with conservation

- As currently practised, biodiversity offsetting with a goal of NNL can entrench ongoing losses of species and ecosystems.
- Counterfactual-based biodiversity offset calculations are complex, they are subject to uncertainty and susceptible to manipulation, and they tend to be done in a piecemeal project-by-project manner.
- The contribution of biodiversity offsets to broader conservation goals is unclear.

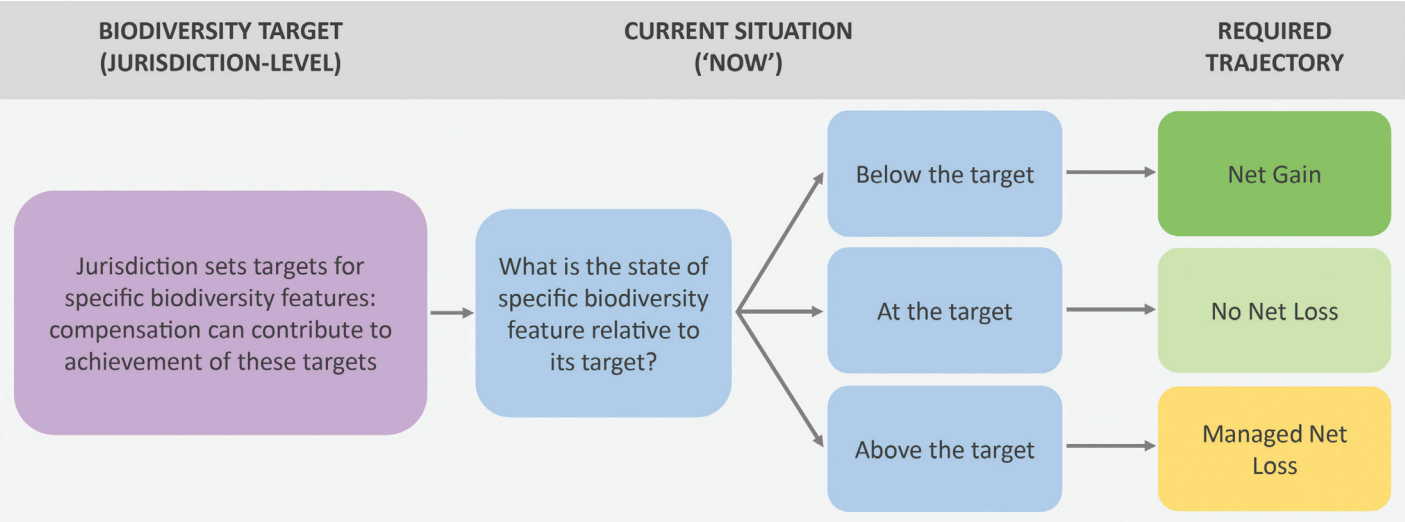
At its worst, biodiversity offsetting could be detracting from the achievement of important conservation goals, such as recovering species populations or halting habitat loss.





An alternative approach: Target-based ecological compensation

- Residual biodiversity losses can also be compensated for in a different way that *contributes proportionately* to the achievement of jurisdictional (e.g., national or sub-national) biodiversity targets.
- The type and amount of compensation required for a particular loss is determined using *a simple framework* – requirements for proponents and outcomes for stakeholders are *clear and consistent*.
- Compensation requirements are aligned with the *desired trajectory* for a particular species or ecosystem, depending on what needs to occur to achieve the target for that feature.
- *Counterfactual scenarios are not needed*.





Implementing target-based ecological compensation: Requirements

The approach requires:

- **Outcomes-based biodiversity targets** for specific biodiversity features (species populations, ecosystems), in a jurisdiction (e.g., national or sub-national). For example, a target for the number of breeding individuals of a threatened species might be a minimum of 10,000; a target for the area of a vegetation community in a region might be at least half of its original extent, in good condition.
 - **Estimates about the current state** of the biodiversity feature in the jurisdiction (e.g., its area or population size).
 - The amount of the biodiversity feature that is or will be **effectively secured** (e.g., in protected areas).
 - **Regulatory control** of at least some sectors that cause biodiversity loss through their activities.
- With this information, the type and amount of compensation for every unit of loss can be determined.*
- The type of compensation depends on the level of the impacted biodiversity compared to its target. To achieve a trajectory of NNL or Net Gain, "Improvement" is the minimum standard of compensation.
 - Ratios for specific biodiversity features are determined upfront, during development of a compensation policy – the ratios then **apply consistently** to all sectors that are regulated to compensate for residual losses (after strict application of the mitigation hierarchy).
 - Other factors can modify the size of the basic (minimum) compensation ratios given by the formulas above – for example, to cater for uncertainty and risk.

	Net trajectory required	Type of compensation (minimum req.)	On-ground action (example)	Amount of compensation (ratio) per unit of loss
Biodiversity feature affected by a project is below its target	Net Gain Increase to target	IMPROVEMENT	Restoration of degraded ecosystem, or interventions to enhance a species' population	$\left(\frac{B - x_p(0)}{x_a(0)} \right)$
Biodiversity feature affected by a project is at its target	No Net Loss Remain at/near target			
Biodiversity feature affected by a project is above its target	Managed Net Loss Do not breach target	MAINTENANCE	Securing a site where the biodiversity feature already exists, and maintaining it at its current state into future	$\left(\frac{B - x_p(0)}{x(0) - B} \right)$

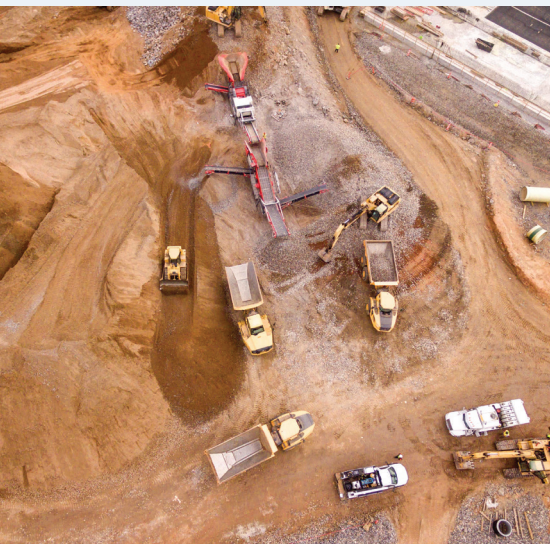
B = Target; $X_a(0)$ and $X(0)$ = amount of biodiversity feature that can be lost at the time the policy established; $X_p(0)$ = amount of biodiversity feature that is effectively protected at the time the policy established

View Video: An alternative to biodiversity offsets: Target-based ecological compensation



Advantages of target-based ecological compensation

- Clarifies division of responsibility among actors.
- Simplifies compensation calculations.
- Improves transparency and clarity.
- Compensation integrated with targets – every unit of loss compensated for in a way that contributes to achieving specified targets, because outcomes at the project level mirror the desired outcome at the jurisdictional level.



This framework builds upon best-practice safeguards and principles (see www.forest-trends.org/bbop). It advances ecological compensation beyond a reactive, ad-hoc response, to ensuring alignment between actions addressing unavoidable biodiversity losses and achievement of targets for conservation. Standard conditions that apply to biodiversity offsetting – adhering to the mitigation hierarchy, limits to what can be compensated, equity etc. – remain valid.

Further information

Martine Maron – m.maron@uq.edu.au; Jeremy Simmonds – j.simmonds1@uq.edu.au