Science for Saving Species

Research findings factsheet

Project 5.1 Better offsets for threatened species

Threatened Species Recovery Hub

National Environmental Science Programme

Resolving wicked problems in biodiversity offsetting

The language of biodiversity offsetting

Counterfactual scenario: The scenario (e.g., a biodiversity trajectory) expected to occur in the absence of some defined action or set of actions (such as an impact and an offset).

Like for like: Gains and losses are of the same type of biodiversity and are measured using the same metric.

Mitigation hierarchy: The process by which environmental impacts from development are avoided, unavoidable impacts are then minimized, and residual impacts are then offset.

No net loss: An outcome in which the total amount of some target biodiversity does not decline below the level expected under some counterfactual scenario. This is usually not the same thing as no further decline.

Offsettability: The likelihood that an offset for a given impact is likely to replace fully the affected biodiversity; contingent on all risks being managed adequately.

Biodiversity offsets have been used to compensate for impacts to Matters of National Environmental Significance by liquid natural gas plants on Curtis Island, QLD.

Governments and companies worldwide are increasingly adopting biodiversity offsetting. It has both supporters and opponents in large numbers, who broadly agree on the suite of challenges, particularly the technical and governance ones, but strongly disagree about whether those challenges render biodiversity offsetting acceptable. Unguided expansion of offsetting certainly carries severe risks, and how best to minimise the risks to biodiversity from offsetting policy remains a wicked problem.

What is biodiversity offsetting?

Biodiversity offsetting is a conservation tool that is designed to counterbalance losses in biodiversity in one place due to development with equivalent benefits to biodiversity elsewhere. It originated in wetland mitigation banking in the US and its global reach is growing, despite its controversial nature. Views on biodiversity offsetting range widely from outright rejection to qualified acceptance. Opposition to biodiversity offsetting is based on the very large range of challenges it entails.

Photo: Greens MP CC BY NC ND 2.0

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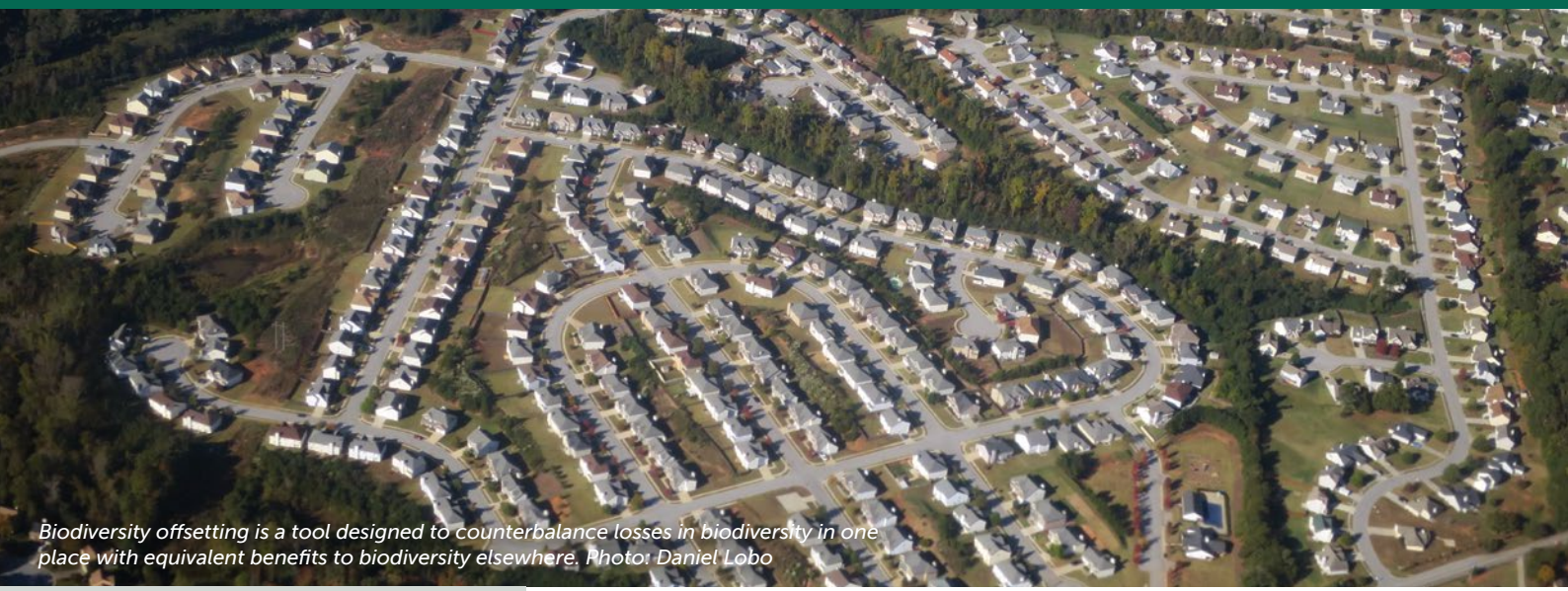

Biodiversity offsetting is a tool designed to counterbalance losses in biodiversity in one place with equivalent benefits to biodiversity elsewhere. Photo: Daniel Lobo

As biodiversity offsetting is increasingly being taken up by governments and companies, there are strong incentives to find ways to resolve challenges and minimise risks.

What is controversial in biodiversity offsetting and why

Objections to and controversy about biodiversity offsetting can be summarised under four broad categories.

Ethical challenges: whether there are fundamental ethical problems with trading losses and gains of biodiversity. Some feel it is intrinsically wrong to 'trade' nature.

Social challenges: how we capture social values and ensure they are reflected in the accounting of losses and gains in offset trade. We need to identify the biodiversity we value and identify the acceptability of losses and gains being experienced by different people.

Technical challenges: if we agree that offsetting is acceptable in principle, and we agree what we want to offset, how effectively can we actually implement offset exchanges? These challenges have received the most research attention, but are far from being resolved.

Governance challenges: developing transparent long-term arrangements to monitor policy compliance and effectiveness, and minimise incentives to circumvent the intended outcomes.

The types of challenges differ in how easy they are to manage or resolve.

The EPBC Act listed swift parrot has been the subject of many biodiversity offset projects.

Photo: Dave Curtis CC BY NC ND 2.0

Resolving offsetting controversies: Tractability and barriers

Some of these issues are reasonably tractable, meaning they are in principle able to be managed or resolved. Technical and governance challenges are often easier to manage in principle, but can remain problematic in practice due to implementation barriers.

An example of a *technical challenge* is applying the mitigation hierarchy effectively. How do we ensure avoidance is taken seriously? Barriers to resolving technical challenges – like situations when offsetting is more attractive to a developer than avoiding an impact – are also potentially resolvable.

An example of a *governance challenge* is ensuring the effectiveness of "offset trust funds." In these case developers pay into the fund based on estimates of the replacement cost of biodiversity, and then the administering body must effectively utilise the funds to deliver conservation benefits equal to the original impacts. Barriers to trust fund effectiveness include: the risk of funds being absorbed into consolidated revenue; the potential for the transparency to be politically unpalatable; and concerns about the move away from like-for-like.

The ethical and social challenges can prove to be very difficult to resolve, because of fundamental differences in values among people. The barriers to resolution can also be significantly higher, and even render these types of challenges unlikely ever to be resolved.

For example, the *ethical challenges* to do with deciding on which values are important and whether trading the loss of nature for its conservation elsewhere is acceptable are subject to continuing societal debate. These challenges run up against the intractable barriers of diverse, competing and changing philosophies with fundamentally unresolvable value judgements about biodiversity.

Social challenges revolve around the question: no net loss of what, compared to what, and for whom? While it can be relatively easy to make people aware of what policy is aiming to achieve, ensuring at the same time that at the policy aim is genuinely what society wants can be very difficult. Barriers to resolution can be moderate to high, with fiendish complexity around identifying, quantifying and weighting diverse and changing value sets. Many can find the frames of reference around ongoing biodiversity decline unpalatable.


Photo: Dominic Sherony CC BY-SA 2.0

Coal mine developments have been proposed for the remaining habitat of the Endangered southern black-throated finch.

Resolution remains elusive yet highly desirable

Even if we resolve some of these issues, biodiversity offsetting remains a wicked problem.

In many cases, problems might be resolved in ways that show that most impacts on biodiversity are not offsettable in a way acceptable to society. Careful application of best practice offsetting approaches may reveal that there is no feasible way to replace old-growth habitat features, or restoration of an ecosystem type is impossible, or protection of enough land to genuinely offset a loss elsewhere would be vastly more expensive than anticipated.

As it stands, biodiversity offsetting is far from being a silver bullet solution to the loss of biodiversity. However, as it is increasingly being taken up by governments and companies, the incentives are strong for finding ways to resolve the issues and minimise the risks.

Image right: Some people feel it is intrinsically wrong to 'trade' nature, which is one of the ethical challenges of biodiversity offset programs. Photo: Julian Meehan CC BY SA 2.0

Photo: Roger Smith CC BY NC 2.0

Biodiversity offsets have been used to compensate for impacts to Endangered gouldian finches (above) from the expansion of the Ord Irrigation District (below).

Recommendations for best practice offsetting:

- Build societal values and preferences in to offset policy design
- Be clear about what elements of biodiversity are included in the scope of a policy
- Ensure offsetting does not reduce the incentive to avoid impacts
- Recognise that not all society accepts offsetting as a valid response to biodiversity impacts
- Ensure transparency about the intended outcomes of offsetting (e.g. if it maintains biodiversity decline, be explicit about this)
- Use best-practice calculation approaches to handle uncertainty, time-lag and additionality in a logical and consistent way
- Require monitoring and reporting of offset performance – outcomes, not just inputs - in publically-available databases

Photo: Jaana Dietenberg

Further Information

For more information about this TSR Hub research, contact Assoc Prof Martine Maron - m.maron@uq.edu.au or visit our website at http://www.nespthreatenedspecies.edu.au/

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