

ARE OFFSETS IN AUSTRALIA FIT ENOUGH TO SURVIVE?

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Abstract

Offsets have increasingly been applied globally as a way to address impacts once avoidance, minimisation and mitigation options have been exhausted. In Australia, offsets are now often identified as a key component in Terms of References for Environmental Impact Statements by regulators, and required as a condition of other development approval processes. Across the country the formal use of offsets for many ecological values is still a relatively new process, which has resulted in ‘teething problems’ in the way offset obligations are triggered, calculated and/or delivered. In some instances there is disconnect between the approvals/development process and the need to provide offsets. Further, the metrics of calculating offset obligations has varied over time and between various State and Federal agencies. Frequently the effectiveness of various offset regimes in mitigating environmental harm have not been adequately assessed before a revised offset framework is released.

In our paper we consider the changes in Australian offset frameworks over the past decade; the differences in offset frameworks across jurisdictions; the known or likely effectiveness of offset frameworks in addressing environmental harm; and the future evolution of offsets toward meaningful and robust metrics that result in genuine ecological outcomes.

1. Biodiversity Offsets Overview

While the term “environmental offset” has only been in our vernacular for a relatively short time, “offsets” have in practice been used in the USA since the 1970s¹. The notion of trading off environmental impacts has been informally or formally used for many years in Australia. By way of example, the proclamation of Kakadu National Park came about as a recommendation of the Ranger Uranium Environmental Inquiry² (i.e. an area was protected and managed in response to the impact of mining etc.).

The World Bank Group³ define biodiversity offsets as:

“... measurable conservation outcomes resulting from actions designed to compensate for significant residual adverse biodiversity impacts arising from project development and persisting after appropriate avoidance, minimization, and restoration measures have been taken.”

This is similar to other definitions adopted by various regulators in Australia such as the Commonwealth government⁴ that define offsets for the purposes of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) as:

“...measures that compensate for the residual adverse impacts of an action on the environment. Offsets provide environmental benefits to counterbalance the impacts that remain after avoidance

¹ <http://www.environment.nsw.gov.au/resources/biobanking/biobankback0609.pdf>

² <http://www.environment.gov.au/science/supervising-scientist/supervision/arr-mines/ranger>

³ World bank Group. (2016). Biodiversity Offsets: A User Guide.

⁴ Department of Environment. (2014). *Environment Protection and Biodiversity Conservation Act 1999* Environmental Offsets Policy.

and mitigation measures. These remaining, unavoidable impacts are termed ‘residual impacts’. For assessments under the EPBC Act, offsets are only required if residual impacts are significant.”

That is, all definitions tend to consider the mitigation hierarchy and balancing significant residual impacts.

In Australia, biodiversity offset frameworks now exist at the Commonwealth level and for most State governments as indicated in **Table 1**. In some States offset frameworks are also adopted by Local governments such as the Brisbane City Council. The way the biodiversity attributes that are ‘offsettable’ are triggered does however, vary across jurisdictions with little consistency between frameworks. Similarly, the way offsets are delivered also varies. The primary delivery mechanisms for these include:

> **LAND-BASED:**

- **Proponent-driven** – where the proponent provides and manages their own offset; or
- **Third-party** – a third party is engaged either as a voluntarily or compulsory requirement of the offset framework to execute the offset obligation. This is often coordinated through accredited practitioners and/or brokers. There are varied approaches across offset frameworks including sourcing properties directly to undertake conservation actions following a proponent’s impacts; drawing on ‘advanced’ offsets (i.e. where conservation actions are taken prior to proponent’s impacts); and/or trading of biodiversity credits.

> **FINANCIAL SETTLEMENT** – This is where a payment is provided directly to the regulator to source an offset. They are sometimes referred to as ‘pay-and-go’ offsets because a proponent’s obligation is met once the financial settlement has been paid.

> **OTHER COMPENSATORY MEASURES (INDIRECT OFFSETS)** – Where other management or research are undertaken which improve the long-term viability of the biodiversity attribute.

Table 1 – Current (2019) Offset Frameworks in Australia

Jurisdiction	Key legislation	Offset trigger				Delivery mechanism		
		Species	Vegetation	Wetlands	Other	Land Based	Financial	Indirect offsets
Commonwealth	<i>EPBC Act</i>	●	●	●	●	●		○
States and Territories	Queensland	<i>Environmental Offsets Act 2014</i>	●	●	●	●	●	
	New South Wales	<i>Biodiversity Conservation Act 2016</i>	●	●	●	●		
	Victoria	<i>Planning and Environment Act 1987</i>	●	●	●		●	
	Australian Capital Territory	<i>Planning and Development Act 2007</i>	●	●			●	○
	South Australia	<i>Native Vegetation Act 1991</i>		●			●	●
	Western Australia	<i>Environmental Protection Act 1986</i>		●			●	○
	Northern Territory	Pending (see <i>Environment Protection Bill 2019</i>)						
Tasmania	Various Acts under the Resource Management and Planning System	●	●			●		○

● = Yes; ○ = Yes in some circumstances

These frameworks have been far from static with many changes seen across all jurisdictions. For example, in Queensland the frameworks associated with clearing of regulated vegetation has been dynamic, as illustrated **Figure 1**.

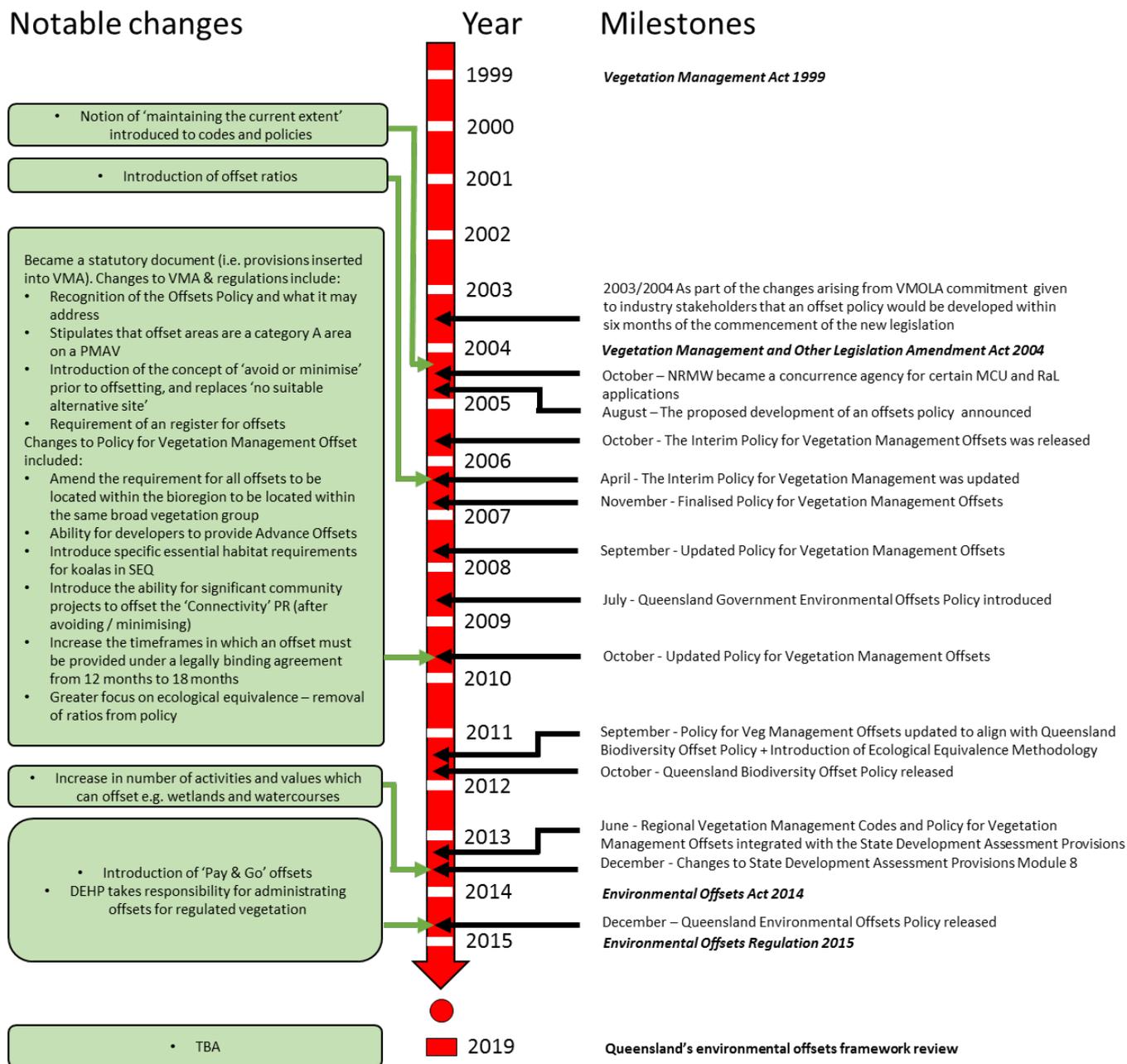


Figure 1 – History of offset frameworks associated with vegetation clearing in Queensland

2. Fitness of offset frameworks

a. Approvals and development process

The triggering of the need to provide environmental offsets varies within each of the jurisdictions, however one element is consistent across many, that being a link to a development proposal, or a change of land use

which triggers the need to obtain an approval. It is this linking of the triggering of a formal approval process and the consequential need to provide an offset which may be a shortcoming in ultimately achieving the end goal of 'compensation' or reducing the irreversible environmental impact of an activity.

An example is the Queensland system of triggering offsets, through undertaking a project or land activity which requires an approval to be obtained under the *Planning Regulation 2017* and assessment against the State Development Assessment Provisions. While this may seem to capture a large number of projects, there are a wide range of exemptions which negating the need to obtain such an approval. The project may still impact on a matter of state environmental significance or result in irreversible impact, but due to the legislative framework in which the development is occurring no approval requirement is triggered, and therefore no offset is required.

The same process applies to offsets at the Commonwealth level where a project may result in an impact on a matter of national significance under the EPBC Act, but if the impact is not considered to be significant, there is no process of requiring the provision of offsets.

Does this linking of the provision of offsets to the development process result in achieving compensation for irreversible impacts on the environment or are we allowing a loss of ecological value through setting triggers in such a way that development is permitted to occur without the need to consider offsets?

b. Metrics

Offset frameworks rely heavily on metrics to:

- > Calculate the magnitude of impact;
- > Calculate the offset obligation (e.g. area, dollars or credits required); and/or
- > Monitor and/or determine the success of the offset.

While it is acknowledged that a different conservation value may be placed on the same biodiversity attribute by different jurisdictions (e.g. koalas are considered Vulnerable in Queensland, but are not listed in Victoria), it stands to reason that across jurisdictions the same biodiversity attribute with the same status should be subjected to similar metrics. In practice this is not the case.

Further exploring the koala (*Phascolarctos cinereus*) as an example, the species is regarded as Vulnerable under Queensland legislation and is also listed as Vulnerable under the Commonwealth's EPBC Act. We assessed the likely offset obligation for the clearing of a 1ha hypothetical site of koala habitat in a location in Brisbane. The Queensland government's online financial settlement offset calculator can compute obligations either via (a) species pathway or (b) impacts on custom mapping for koalas. The obligation calculated for 1ha of koala habitat via the (a) species pathway indicated that 4ha is required at >AU\$1 million, whereas if calculated using the (b) custom koala map the obligation is 3ha at >AU\$0.2 million. When assessed using the Commonwealth's calculator the offset obligation is 1.0408ha⁵. The Commonwealth's calculator relies on multiple inputs, some of which are subjective and can significantly alter the outcome (e.g.

⁵ Based on the impacted habitat scoring 10 and the receive site scoring 0 at commencement, but with 100% confidence that it will attain a score of 10 within 20 years.

if we reduced our confidence in a favourable outcome from 100% to 80% the offset obligation increases by around 0.3ha, which may increase costs by more than AU\$70,000⁶).

c. Effectiveness in addressing environmental harm

Ongoing changes in offset frameworks would ideally be informed by an adaptive management approach. That is, by continually monitoring the effectiveness of offsets in delivering conservation gains the frameworks can be improved based on this evaluation. However, despite the dynamism of offset frameworks, discrepancies between assessments and approvals, and the complexities associated with metrics, there have been very few instances where the effectiveness of biodiversity offsets in delivering a conservation gain in Australia have been tested. The cost of offset delivery (e.g. financial settlements in Queensland costed >AU\$35 million alone over the past five years⁷) is a further and substantial reason to gain a clear understanding of their effectiveness (i.e. is there a genuine cost-benefit?).

A study conducted in Western Australia⁸ of 208 offsets found that 39% were effective, 30% were ineffective and the remainder could not be assessed owing to inadequate or premature reporting.

At a national level projects approved under the *Environment Protection and Biodiversity Conservation Act 1999* may be subject to a compliance audit. Each year the Commonwealth conducts an audit of projects that are either selected randomly or on a risk-focused basis. The audits are based on whether the project has been delivered as planned and not effectiveness of outcomes. Since the introduction of the Commonwealth offset policy in 2012, a total of 49 projects⁹ have been audited with 8% of these noting minor non-compliances insofar as delivery of conditioned offsets are concerned. A consolidated assessment of the effectiveness of offset outcomes delivered by all audited projects would aid in determining whether they “achieve long-term environmental outcomes for matters protected under the EPBC Act” as promoted in the Commonwealth’s Environmental Offsets Policy.

3. Conclusion

Biodiversity offsets are now embodied in environmental legislation at all levels of government in Australia and are part of the vernacular of the development and mining sectors. They are here to stay. Given this, there is a need to improve the way they are assessed and delivered as shown by some of the shortcomings identified in the previous paragraphs. In particular there is a need to:

- > Improve metrics used to calculate the magnitude of impacts, the offset obligation and measure ecological success.
- > Base these improvements on rigorous science and by adopting adaptive management principals.
- > Review the effectiveness of achieving good ecological outcomes with the current linking of the provision of offsets with development application processes and assess alternative mechanisms that may achieve improved outcomes for the environment.

⁶ Based on the financial settlement costs to provide a 0.3ha offset using the Queensland Offset Calculator.

⁷ <https://www.qld.gov.au/environment/pollution/management/offsets/registers>

⁸ May, J., Hobbs, R.J. And Valentine, E. (2017). Are offsets effective? An evaluation of recent environmental offsets in Western Australia. *Biological Conservation*. Vol 206, pp 249-257.

⁹ <https://www.environment.gov.au/epbc/compliance-and-enforcement/auditing>. The number of projects that had met their offset obligation is unknown.

Prior to the introduction of biodiversity offsets, approval for projects frequently resulted in the 'taking' of biodiversity values without the need to 'give' something back. The introduction of frameworks has therefore aided in addressing environmental harm by requiring proponents to give something back. Present frameworks do however require improvement and they must therefore evolve to result in genuine conservation gains.