



Biodiversity banking and offset scheme of New South Wales (NSW), Australia

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Short title: Biodiversity Banking and Offset Scheme of NSW, Australia

Key Message: Buying and selling of credits to mitigate environmental impacts of a project, off-site on 'biobank sites'

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1. What is the problem?

In Australia, 40% of nationally listed threatened ecological communities are present in urban areas, and the rate of loss is accelerating due to expanding urbanization. New South Wales (NSW) situated in the southeast of Australia, faces serious environmental problems including salinity, declining water quality, land degradation, tree decline, and biodiversity loss. Approximately 1,000 plants, animals, and ecological communities are threatened. Habitat degradation and loss have resulted from over-grazing, clearing of land for agriculture, and from the clearing of native vegetation for urban development. It has been estimated that the total reduction in the area of woody vegetation in NSW from 2006 to 2007 was 243,155 hectares, of which 202,437 ha were attributable to fire, 18,667 ha to cropping pasture and thinning, 18,246 ha to forestry, and 3,805 ha to rural and major infrastructure including roads, buildings, power lines, water pipelines, and mine development (Burgin 2008, Mamouney et al. 2009 and Sheahan 2001).

2. What approach was taken to deal with this problem?

The Biodiversity Banking and Offset Scheme of New South Wales was introduced on July 11 2008, with an aim to implement market-based incentives that both encouraged conservation and discouraged impacts on biodiversity. The Department of Environment, Climate Change and Water NSW (DECCW) operates the scheme under Part 7A of the *Threatened Species Conservation Act 1995*¹ and believes that this voluntary offset scheme is an appropriate mechanism to 'counterbalance' the impacts on biodiversity due to development. It builds on

¹ The *Threatened Species Conservation Amendment (Biodiversity Banking) Bill 2006* was passed by the NSW Parliament on 22 November 2006 and inserted a new Part 7A into the *Threatened Species Conservation Act*.

previous government initiatives designed to conserve threatened species and habitat, and ecological communities under threat, such as the Environmental Planning and Assessment Act 1979, Threatened Species Conservation Act 1995 and Native Vegetation Act 2003 (Burgin 2008 and Mamouney et al. 2009).

Simply put, '*biodiversity banking*' which is also referred to as '*mitigation banking*' or '*conservation banking*' is a system whereby the environmental impacts of a project are mitigated off-site on another land-holding, termed as 'biobank sites'. Landowners manage their biobank site in order to either improve or maintain the site's overall biodiversity values. Developers can then offset the impacts of their development site – after they have minimized and mitigated the impacts on the site – by purchasing matching biodiversity 'credits' from the biobank site owner². Once these credits are sold, a specified minimum amount of the sale proceeds is paid into the BioBanking Trust Fund. These credits then enable the biobank to undertake land restoration and protection activities, which offset or mitigate, the impacts of the development. Demand for credits encourages the establishment of biobanks, which produce credits. The supply of these credits is a direct product of regulation, as agencies determine and approve the number of credits, which a bank can sell (ACERA 2007, DECCW 2009, Sheahan 2001).

3. What ecosystem services were considered and how?

'Improve or maintain biodiversity values test' is central to the BioBanking scheme and is carried out through the BioBanking Assessment Methodology. These biodiversity values include water quality, salinity, biodiversity, and land/soil degradation. The assessment methodology provides a rules-based approach to determine whether a development can proceed. As part of the BioBanking Assessment Methodology, an accredited BioBanking Assessor must apply the 'improve or maintain' test for biodiversity values, and use the BioBanking Credit Calculator for the assessment of biodiversity and threatened species under the *Native Vegetation Act 2003*³. Databases contained in the BioBanking Credit Calculator contain detailed information of 1600 vegetation types and characteristics of listed threatened species (DECCW 2009 and McKenney 2010).

4. What input was required?

As mentioned previously, BioBanking is established under Part 7A of the Threatened Species Conservation Act of 1995 (TSC Act). This Act establishes the BioBanking Assessment Methodology and the BioBanking Trust Fund; it also provides the framework to create biobank sites, issue biobanking statements, and manage biodiversity credit transactions. This legal framework provides for the creation of biodiversity credits that can be sold on the open market. It also provides monitoring & compliance arrangements that offer an escalating response to non-compliance and establishes public registers for biodiversity credits, biobank sites, and biobanking statements (Bayon 2008, Mamouney et al. 2009). The *Environmental Planning and Assessment Act 1979* is the main instrument through which a mitigation condition is applied.

² ² In May 2010, Environment minister Frank Sartor signed the first bio-bank agreement, which will see 80 hectares of rural land near Camden protected as a conservation reserve, by developers who want to build 180,000 houses on protected land in Sydney's western suburbs.

³ The biodiversity values of both development sites and biobank sites must also be assessed based on seven criteria- State & national priorities, Regional value, Landscape Value, Site Value, Threatened species, Management actions and the area (hectares) of the land to be developed (the development site) or managed for biodiversity (the biobank site).

The Native Vegetation Act 2003⁴ sets the stage for native vegetation offset programs (McKenney 2005, Sheahan 2001).

5. What was the policy uptake and what were the conditions for this effort to actually influence public management?

Some of the benefits of biodiversity banking that may encourage *landholder involvement* in the scheme include investment into conservation on private land without effecting ownership, biodiversity recognized as a positive rather than a negative and additional value added to the land in preserving or restoring the conservation value. Research into conservation banking in the United States showed that programs are more likely to be successful at getting landholders involved if they trust the organization that is helping to set up the program. In NSW, one of the strengths of this is that it has been embraced by mining companies such as Newmont and Rio Tinto, which have participated in such offsets in a 'voluntary' capacity⁵ (Burgin 2008). Although the Biobanking and Offset Scheme concept is still relatively new in Australia and therefore the *market relatively immature*, it has been proven with biobanking and offset schemes in the United States, that 63% of conservation bank owners would be willing set up conservation banks again if given the opportunity. Prior to the legislation coming into force, consents to clear native vegetation stood at around 100,000 hectares per year; currently, approved clearing over two years from 2005 to December 2007 was 3,786 hectares. (Mamouny et al. 2009, Stewart-Rattray 2006).

However, there has also been a degree of opposition to this scheme from the environmentalists, who see it as a backward step for threatened species conservation in NSW as it allows land of significant ecological value to be destroyed if land of supposed 'equal value' is protected elsewhere (Perinotto 2010). Burgin (2008) also points out that this logic of the offset process is in essence flawed as the offsetting of one area for development with another for conservation, does not necessarily result in net gain. In addition, BioBanking also allows for areas to be enhanced as part of an offset. If this included removal of debris from the floor of the remnant there is likely to be an impact on some species, particularly reptiles and other ground dwelling species. Determining the value for biodiversity has proved to be challenging as there have been problems with developing effective qualitative methodologies that quantify the impact on biodiversity of a development, and the biodiversity benefits of the proposed offsets. Furthermore, one of the main issues with the management of offset incentives is that of compliance. Reviews of 'mitigation banking' have been found to have high rates of noncompliance with agreed conditions⁶. Although there are provisions under the New South Wales Threatened Species Conservation Amendment (Biodiversity Banking) Bill 2006 to deal with non-compliance, once offsets have been negotiated there are issues associated with monitoring, management and financing throughout the life of the operation.

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⁴ The Act seeks to promote the management of native vegetation, prevent broad scale clearing, protect native vegetation of high conservation value and encourage the revegetation & rehabilitation of land with appropriate native vegetation, in accordance with the principles of ecologically sustainable development.

⁵ BHP Billiton, Ravensthorpe Nickel Project, BHP Billiton 2004; Xstrata, McArthur River Mine Open Cut Project 2005 are some of the other industries that have embraced the concept wholeheartedly.

⁶ In Canada less than 15% of 124 developments associated with fish habitat were compliant with conditions, while in Massachusetts it was found that 54% were non-compliant including 21.9% where there had been no attempt to construct the wetlands required as offsets.

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