The role of science in public policy development: biobanking and biocertification in NSW

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Key words: *Threatened Species Conservation Act 1995*, biodiversity offsets

Everyone would agree that good public policy and effective environmental laws should be underpinned by sound scientific information and principles. In recent years, the NSW Government began to develop complex environmental outcomes assessment methods to underpin decision-making under environmental legislation. These scientific assessment tools have been developed to assess impacts of two of the major threats to biodiversity, first, broadscale vegetation clearing and, more recently, impacts of urban development. This paper discusses some of the advantages and concerns about the current use of scientific decision-support tools for legislation.

The state government attempted to address the conflict between development and biodiversity protection with amendments to the *Threatened Species Conservation Act 1995* introduced over recent years. These amendments are the biodiversity certification scheme, which commenced in 2005 and the biobanking scheme which commenced in July 2008. The development of corresponding scientific assessment tools has been largely related to assessing the environmental impacts and attempting to quantify appropriate environmental offsets.

The development in NSW of schemes such as biobanking and biocertification is relevant to the RZS Conference theme of "Science Under Siege" for three main reasons. First, biodiversity offset schemes are an attractive option for governments wishing to facilitate development while doing some conservation, and that want their schemes to have scientific credibility. Second, scientific assessment tools are now being used to justify biodiversity offsets. Third, there is potential for scientific assessment tools to be undermined by political decisions. To illustrate these issues, the current schemes are outlined below.

Biobanking

Biobanking is a voluntary biodiversity offset scheme under the *Threatened Species Conservation Act 1995*, whereby a developer can buy biodiversity credits to offset the impacts of a development. The credits are generated by undertaking conservation management actions at a designated biobank site. Credits are calculated using a specific gazetted assessment tool, and sufficient credits must be purchased to "maintain or improve biodiversity outcomes."

Biocertification

Biocertification is another related voluntary scheme under the *Threatened Species Conservation Act 1995* whereby a proposal for development of an area of land can be granted biodiversity certification if it is deemed to result in an overall maintenance or improvement of biodiversity values. This involves identifying areas to be developed, areas to be protected, and additional offset areas where required. This is an alternative to individual site assessment and assessments of significance under the Act (DECC 2008). Earlier versions of the scheme were not based on an established scientific method and the first proposal to biocertify the *State Environmental Planning Policy (Sydney Region Growth Centres) 2006* was challenged in the Land & Environment Court. The applicant, the True Conservation Association alleged that that (1) there had been insufficient on-site studies done of individual threatened species and (2) the Minister did not have any rational basis for concluding that the plan would improve or maintain biodiversity values. These allegations were denied by the Minister. The proceedings were effectively terminated by special legislation passed six weeks before the matter was due to be heard in court. The legislation simply conferred biocertification directly on the Growth Centres Policy, leaving the court case unable to proceed, but left the underlying provisions relating to biocertification unchanged.

Subsequently, the NSW Department of Environment, Climate Change & Water (renamed the Office of Environment and Heritage following the change of government in NSW on 26 March 2011) has developed an assessment method in an attempt to improve the scientific rigour and credibility of the process.

Maintain or improve biodiversity values: a scientific test?

The legislative test for both biobanking and biocertification is that actions must "improve or maintain biodiversity values."

This test was first developed under the *Native Vegetation Act 2003* (NSW), and was the catalyst for the development of the *Environmental Outcomes Assessment Methodology* which is a compulsory tool for assessing all land clearing proposals (DECCW 2005). The Act was introduced, following an election promise of former Premier Bob Carr, to prevent broadscale clearing unless it maintained or improved environmental outcomes. The EDO, as legal advisor to conservation groups, was involved in over two years of negotiations with NSW Government and the NSW Farmers Association to develop the regulation and methodology to determine

Pp131-133 in Science under siege: zoology under threat, edited by Peter Banks, Daniel Lunney and Chris Dickman. Royal Zoological Society of New South Wales, Mosman, NSW, Australia. 2012.

DOI : 10.7882/FS.2012.048

exactly what "maintain or improve" meant under the Act. The resulting tool measures impacts of clearing on biodiversity (including a threatened species *BioMetric* tool, (see: Gibbons *et al.* 2005), water, soil, and salinity on a site by site basis to determine if clearing should be prohibited or permitted with offsets. This tool is relatively comprehensive and rigorous and has resulted in decreased rates of land clearing on rural land in NSW (DECCW 2009).

Similar to the political negotiation process of developing the native vegetation legislation, the EDO, as part of the Ministerial Reference Group on Biobanking, continues to be involved in reviewing the development of the biobanking regulation and assessment methodology that determines what is deemed to maintain or improve biodiversity values under the biobanking scheme. Drawing on components of the native vegetation tool, a complex biobanking method has been developed to calculate what type and quantity of ecosystem and species credits a developer would need to purchase to adequately offset the impacts of a development. Negotiation on the assessment tool polarized debate. Developers and farmers wanted the tool to be as simple as possible, to provide the cheapest and most time-efficient process of assessment (compared to current assessments of significance); to provide flexibility in offsets (especially where it may be difficult to find offsets of rare vegetation types); and wanted the tool to take non-scientific criteria into account (such as financial contributions). On the other hand, the green groups wanted a robust, rigorous and objective assessment tool, that assessed a comprehensive set of variables, with strict offsetting rules (particularly around requiring only 'like for like' offsets); and for the results of the method to be protected from political influence.

Benefits of using scientific assessment tools to support legislation?

There are a number of benefits of developing scientific assessment tools to support environmental legislation. Such tools put science at the centre of legislative tests, and provide an objective decision-making framework compared with previous more subjective regional approaches. Considerable scientific debate and effort has gone into the development of such tools (for example, see Gibbons *et al.* 2008), and they have galvanized the collection of data on a range of variables. The tools do provide some rigour and accountability around biodiversity offsetting, which in the absence of such tools occurs on an ad hoc basis with highly variable environmental outcomes (Farrier *et al.* 2007). The assessment tools can also be used for other applications, such as assisting local councils and CMAs undertaking land-use planning.

Problems associated with the current assessment tools

Notwithstanding the benefits of robust objective methods, the tools developed in relation to biobanking and biocertification have a number of weaknesses. Unfortunately the regulatory provisions establishing the tools also provide ways for results of the tools to be overridden or varied, opening up opportunities for sound science to be overridden by political pressure. The tools do not contain purely scientific assessment criteria, but also include government policy positions that have been agreed with certain stakeholders. For example, the tools allow for biodiversity credits to be purchased from a vegetation type "of equal or greater scarcity" rather than a strict "like for like" requirement. While this does direct resources to management of scarce vegetation types, it still equates to a net loss of the vegetation type at the development site. Other examples of non-scientific criteria include where the tools provide for consideration of financial contributions in lieu of offsets.

An overarching question remains – is it ecologically possible to offset biodiversity and what are the ecological limitations to such a scheme (Gibbons and Lindenmayer 2007; Bekessey *et al.* 2010)? One patch of vegetation will never be identical to another, and the response of different species to different management actions on a biobank site is not guaranteed – it is assumed the values will be improved if certain actions are undertaken. Other environmental offset schemes, such as the Hunter Valley Salinity Trading Scheme, have produced clear results as the amount of salt in a river at a given point is quantifiable and can be reduced to a fungible unit. Biodiversity on the other hand is unique and diverse and it is not as simple as offsetting 1 kg of Swift parrot.

Conclusion

Biodiversity offset schemes are very attractive to governments as a way of allowing development to continue, often in areas where the biodiversity is under pressure, such as urban and coastal areas. Mistrusted by green groups and farmers for different reasons, voluntary schemes such as biobanking and biocertification will only appeal to developers if assessments are faster and cheaper than under current legal requirements, and will facilitate clearing of certain urban growth areas. The NSW Government has attempted to give biodiversity offsetting schemes (biobanking and biocertification) ecological legitimacy by legislating that scientific assessment tools must be used. However, the negotiation and public policy development process involving different stakeholders has meant the tools have been modified and potentially weakened by the inclusion of non-scientific assessment criteria. While there has been some success in rural areas using the stricter mandatory *Environmental Outcomes Assessment Methodology* to prevent broadscale clearing of native vegetation on farms; whether the biobanking and biocertification tools will actually "maintain or improve" biodiversity values in urban areas remains to be seen.

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