



BioBanking

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Overview

The BioBanking Scheme (BioBanking) is established under the *Threatened Species Conservation Act 1995* (NSW) (TSC Act). The aim of BioBanking is to ensure that development proceeds in a way that improves or maintains biodiversity values in NSW.²

BioBanking is a voluntary alternative to the current threatened species assessment process. It does not override or replace any other legislative requirement.

BioBanking is a market-based instrument which does two main things:

1. It controls the clearing of vegetation resulting from development in urban areas.
2. Where development and clearing is allowed, it establishes a procedure to offset the impacts of the clearing.

A market based instrument is an instrument that uses trading mechanisms, auctions, or price signals to positively influence the behaviour of people managing natural resources. Under BioBanking, where development results in clearing, biodiversity values are able to be improved or maintained by the use of biodiversity offsets. An offset is an activity that improves biodiversity values at one site to compensate for loss of biodiversity at another site.

¹ http://www.edonsw.org.au/legal_advice

² *Threatened Species Conservation Act 1995* (NSW), s. 127A.

The impacts of a development and the benefits of offsets are measured in terms of biodiversity credits. A credit represents either a loss or a gain in biodiversity values.

A key element of BioBanking is the [BioBanking Assessment Methodology](#),³ which is a biodiversity assessment tool that quantifies (or gives a number to) biodiversity values, and is used to determine biodiversity values and the number of credits for a site.

For more information on BioBanking see our [Threatened Species and Ecological Communities Fact Sheet](#) and our [Conservation on Private Land Fact Sheet](#), and the [Office of Environment and Heritage website](#).

By committing to the BioBanking scheme, landholders can generate 'biodiversity credits' by enhancing and protecting biodiversity values on their land through a BioBanking agreement. The credits generated by the landholder can be sold to companies or other people who need to offset the impacts of their development on the biodiversity values of another site, or to people who want invest in conservation.

For example, there may be a loss of biodiversity values at a development site due to the impacts of the development. The loss is the difference between the current values and the predicted future values after development. This process generates a demand for credits to be purchased to offset the loss. The number of credits required to be purchased is set out in a BioBanking statement, which is issued by the Office of Environment and Heritage. The BioBanking statement may also include requirements to implement on-site mitigation measures to minimise direct or indirect impacts.

At a biobank site, there is a gain in biodiversity values due to the implementation of management actions which improve the site. The gain is the difference between the current value and the predicted future value due to management actions. This process creates a supply of credits that can be sold to a developer or anyone else. The management actions required and the number of credits created at a biobank site is set out in a biobanking agreement, which is issued by the Office of Environment and Heritage.

When credits are purchased, the developer pays a specified minimum amount of money into the [BioBanking Trust Fund](#), and may also have to pay additional money direct to the biobank site owner, depending on how the price of the credit was negotiated. The Trust Fund invests money generated by the sale of the credits and the income generated is used to make scheduled annual payments to biobank site owners to implement the management actions at the biobank site in perpetuity.⁴

Biobank sites can be established independently of development sites. This is likely to reduce the time that a developer spends searching for, and negotiating over, offset sites. One of the roles of OEH is to facilitate the buying and selling of credits between developers and biobank site owners.

³ <http://www.environment.nsw.gov.au/biobanking/assessmethodology.htm>

⁴ *Threatened Species Conservation (Biodiversity Banking) Regulation 2008* (NSW), cl. 29.

Scope of BioBanking

BioBanking is a voluntary alternative to the current threatened species assessment process (i.e. the '7 part test', the species impact statement, and concurrence requirements). Whenever a developer would have normally been required to undertake a '7 part test' or a species impact statement, the developer now has the option of using BioBanking.

BioBanking does not override or replace any other legislative requirement. For example, it does not override development controls in Local Environmental Plans, requirements for referral or approval under the *Environment Protection and Biodiversity Conservation Act 1999* (NSW), or the requirements of State Environment Planning Policies.

For more information on threatened species assessment, see our [Threatened Species and Ecological Communities Fact Sheet](#).

BioBanking statements

BioBanking statements apply to a development site. They may be issued for development requiring approval under Part 4 or Part 5 of the *Environmental Planning and Assessment Act 1979* (NSW).⁵ BioBanking statements cannot be issued for the clearing of certain native vegetation under the *Native Vegetation Act 2003* (NSW).⁶

For more information on land clearing in rural areas, see our [Clearing Vegetation Fact Sheet](#).

BioBanking under Part 4 and 5 of the *Environmental Planning and Assessment Act 1979* (NSW)

If a BioBanking statement is issued for a development under Part 4 or 5 of the *Environmental Planning and Assessment Act 1979* (NSW), there are a number of consequences:

- The development is taken as not likely to have a significant impact on threatened species, etc. under Part 4 or 5 of the *Environmental Planning and Assessment Act 1979* (NSW).⁷
- The consent or determining authority is not required to consider the impacts of the development on biodiversity (e.g. under s. 79C or s. 111 of the *Environmental Planning and Assessment Act 1979* (NSW)).⁸
- The consent or determining authority must include the conditions contained in a biobanking statement in the conditions of approval for the development.⁹ The authority can impose additional conditions on the development, but these

⁵ *Threatened Species Conservation Act 1995* (NSW), s. 127ZJ.

⁶ *Threatened Species Conservation Act 1995* (NSW), s. 127ZJ.

⁷ *Threatened Species Conservation Act 1995* (NSW), ss. 127ZO(1), 127ZP(1), Schedule 7.

⁸ *Threatened Species Conservation Act 1995* (NSW), ss. 127ZO(1), 127ZP(1).

⁹ *Threatened Species Conservation Act 1995* (NSW), ss. 127ZO(2), 127ZP(2).

cannot be inconsistent with the conditions in a statement. Also, the authority may still refuse consent.¹⁰

Biobanking agreements

Biobanking agreements apply to biobank sites. Biobank sites can be established on most land in NSW, including land subject to the *Native Vegetation Act 2003* (NSW), on Crown land (unless the land is subject to an offset under a property vegetation plan), on Crown-timber lands (e.g. State Forests) and on Council land (such as Council reserves).

A biobank site cannot be established on land reserved under the *National Parks and Wildlife Act 1974* (NSW) (such as national parks), on land protected under the *Forestry Act 2012* (NSW) (such as flora reserves and special management zones), nor on land that is an offset under the *Environmental Planning and Assessment Act 1979* (NSW), the *Native Vegetation Act 2003* (NSW), or any other Act.¹¹ Also, biobank sites cannot be established on land that is, in the Minister's opinion, inconsistent with biodiversity conservation due to previous, current, or proposed future land uses.¹²

A biobank site can be established on land subject to existing management actions, such as conservation agreements. However, credits can only be created for management actions that are *additional* to any actions already required under the following conservation obligations:¹³

- A restriction on use or public positive covenant under Part 4A of the *Crown Lands Act 1989* (NSW).
- A conservation agreement under the *National Parks and Wildlife Act 1974* (NSW).
- A trust agreement under the *Nature Conservation Trust Act 2001* (NSW).
- Any agreement with a public authority under which the landowner receives funding for biodiversity conservation.
- In the case of publicly owned land, any requirements under any Act to manage the land for biodiversity conservation.

The methodology requires that where a biobank agreement is entered into on land subject to one of these obligations, the creation of credits is discounted by a certain percentage for each management action already required to be undertaken on the land. This means that if all of the management actions required under BioBanking are already being undertaken on a site, then no credits will be created on that site.

It is important to note that this does not apply to a public positive covenant, a conservation agreement, or a trust agreement entered into before 1 January, 2009. This means that full credits are awarded under these agreements if they are entered

¹⁰ *Threatened Species Conservation Act 1995* (NSW), ss. 127ZO(2), 127ZP(2).

¹¹ *Threatened Species Conservation (Biodiversity Banking) Regulation 2008* (NSW), cl. 11.

¹² *Threatened Species Conservation (Biodiversity Banking) Regulation 2008* (NSW), cl. 11.

¹³ *Threatened Species Conservation (Biodiversity Banking) Regulation 2008* (NSW), cl. 4.

into before 1 January, 2009, but the discount process described above applies if the agreements are entered into after that date.¹⁴

The BioBanking Assessment Methodology

A key element of BioBanking is the [BioBanking Assessment Methodology](http://www.environment.nsw.gov.au/biobanking/assessmethodology.htm)¹⁵ (the methodology). The methodology aims to ensure that BioBanking operates to improve or maintain biodiversity values.

The methodology is designed to assess all terrestrial and freshwater biodiversity values in accordance with the definition of biodiversity values under the *Threatened Species Conservation Act 1995* (NSW),¹⁶ which includes the composition, structure and function of ecosystems, and threatened species, etc., but does not include fish and marine vegetation.

The methodology must be applied by an accredited 'Biobanking Assessor'¹⁷ in determining whether a development improves or maintains biodiversity values. If the methodology determines that a development does not do this, then the Office of Environment and Heritage cannot issue a biobanking statement for the development.¹⁸

The key components of the methodology are:

- Defines 'improve or maintain biodiversity values'.
- Biodiversity databases.
- Survey and assessment of biodiversity values.
- Calculation of biodiversity credits.
- Offset rules.

Meaning of 'improve or maintain biodiversity values'

The methodology establishes the circumstances where a development is to be regarded as maintaining or improving biodiversity values.

There are two components to the 'improve or maintain' test:

- Controls on clearing - A development must either avoid direct impacts on 'red flag areas' or, if a development impacts red flag areas, the Director-General must determine that the impacts are acceptable in accordance with the methodology.

¹⁴ *Threatened Species Conservation (Biodiversity Banking) Regulation 2008* (NSW), cl. 4.

¹⁵ <http://www.environment.nsw.gov.au/biobanking/assessmethodology.htm>

¹⁶ *Threatened Species Conservation Act 1995* (NSW), s. 4A.

¹⁷ *Threatened Species Conservation Act 1995* (NSW), s. 142B; *Threatened Species Conservation (Biodiversity Banking) Regulation 2008* (NSW), cl. 12.

¹⁸ *Threatened Species Conservation Act 1995* (NSW), s. 127ZL.

- Offset requirements - If clearing is allowed, the direct and indirect impacts of the development must be offset by the purchase and retirement of biodiversity credits in accordance with the methodology.

There are two components to the controls on clearing:

- Red flags.
- Decision-making discretion.

Red flags areas

Red flags are areas of land with high conservation value. A red flag is defined as an area of land that contains:

- an endangered or critically endangered ecological community **not** in 'low condition' or
- a vegetation type that is more than 70% cleared compared to its pre-1750 extent **not** in 'low condition', or
- a threatened species that cannot withstand further loss.

Red flags include threatened species, populations, and ecological communities listed under both the *Threatened Species Conservation Act 1995* (NSW) and *Environment Protection and Biodiversity Conservation Act 1999* (Cth), but exclude vulnerable ecological communities. Red flags are determined on [Local Land Services](#) (LLS) area basis, so that a vegetation type or threatened species may get a red flag in one LLS area but not in another. Threatened species that cannot withstand further loss were determined by expert panels established by the Office of Environment and Heritage.

'Low condition' vegetation is vegetation with both a highly cleared or completely cleared over-storey and a mostly weedy or largely cleared understorey. If native vegetation is not in 'low condition', it is defined as being in 'moderate to good condition'.

Decision-making discretion

The Chief Executive of the Office of Environment and Heritage can override a red flag if satisfied that certain criteria, as set out in the methodology, are met. A developer will have to justify to the Office of Environment and Heritage why a red flag should be varied by addressing all of the criteria in a report.

The key criteria are:

- Measures to avoid impacts on red flag areas must be considered.
- The development must not impact on a vegetation type that is more than 90% cleared in a LLS and that is in a patch more than 4 ha in size.
- The site's contribution to regional biodiversity values must be low.
- The site's long term viability must be low or not viable.

Under each criterion, the methodology lists a number of factors that the Director-General must consider when assessing each criterion.

Biodiversity databases

The methodology is supported by a number of biodiversity databases. The databases are very important, as they contain key ecological information that feeds into all components of the methodology. The databases are a good source of information on threatened species, etc. in NSW. [Click here](#) to see the biodiversity databases. There are two key databases.

Vegetation Types Database

This database describes each of 1,600 vegetation types that have been identified in NSW. It identifies what Catchment Management Area each vegetation type occurs in and how much of each type has been cleared in each catchment. It also identifies what vegetation types are potentially also threatened ecological communities.

Threatened Species Profile Database

This database includes ecological information on all threatened species listed under the TSC Act and EPBC Act. For each species, it contains data that is used as filters to predict whether the species occurs at a site, it identifies red flags, and it identifies how well a species is likely to respond to management actions at a biobank site (see below). For each species, it also identifies the survey methodology required to survey for a species at a site.

Survey and assessment of biodiversity values

The biodiversity values of a site are assessed by measuring two things:

- Vegetation (vegetation types).
- Threatened species (where they are predicted to occur at a site).

The methodology requires vegetation surveys to be undertaken at both the development site and the biobank site and may also require either targeted surveys or habitat assessments for threatened species (see below).

Surveys must be undertaken in accordance with the [Operational Manual](#)¹⁹ and the [Threatened Species Survey and Assessment: Guidelines for Developments and Activities](#)²⁰, which specifies both the survey methodologies required and how much surveying is required at each site.

When assessing a site, it must be divided up into zones based on vegetation types and the general condition of the vegetation. The assessment of biodiversity values, the calculation of credits, and the offset rules that apply to a site are determined separately for each zone.

¹⁹ <http://www.environment.nsw.gov.au/biobanking/calculator.htm>

²⁰ <http://www.environment.nsw.gov.au/threatenedspecies/surveyassessmentguidlins.htm>

Assessing vegetation

In terms vegetation, the value of a site is determined by measuring two main things:

Site value

This is a measure of the condition of each vegetation type at a site compared to its condition in a relatively unmodified state (called 'benchmark condition'). It is determined by measuring 10 site attributes in surveys (transects and plots) at a site and comparing each attribute against its benchmark value. The benchmark values for all vegetation types in NSW are contained in the Vegetation Benchmark Database.

Landscape value

This is a measure of the value of a site due to its landscape context, or where the site sits in relation to other patches of vegetation in the landscape. It is determined by measuring three things:

- Amount (per centage cover) of native vegetation surrounding the site. A site that occurs in a well vegetated landscape gets a higher value than a site in a highly cleared landscape.
- Connectivity of the site with surrounding vegetation. A site that is well connected to other vegetation gets a higher value than a site that is isolated.
- Size of the patch of vegetation at the site. The larger the patch of vegetation at a site, the higher the value it gets. The value is determined relative to how cleared the surrounding landscape is.

Assessing threatened species

In terms of threatened species, the value of a site is assessed differently depending on the type of threatened species predicted to occur at a site.

The methodology classifies threatened species into two types:

- Species whose occurrence at a site is predictable by vegetation types - this comprises fauna species only.
- Species whose occurrence at a site is not predictable by vegetation types - this comprises all flora species and some fauna species.

The [Threatened Species Profile Database](http://www.environment.nsw.gov.au/threatenedspecies/)²¹ identifies which species are predictable by vegetation types.

Species predictable by vegetation types

The presence of these species at a site is determined by applying five filters to the list of all threatened species in NSW. Filters are things like what vegetation types the species can occur in and what size and condition a vegetation patch has to be in for a species to occupy it. If a site addresses all five filters for a species, then that species is assumed to occur in the vegetation types at the site suitable for it. Surveys

²¹ <http://www.environment.nsw.gov.au/threatenedspecies/>

are never undertaken for these species. If a species is predicted to occur using the five filters, then they are assumed to be present.

Species predictable by vegetation types are assessed by measuring how much habitat occurs at the site and the quality of that habitat.

Species not predictable by vegetation types

The presence of these species at a site is determined by applying the same five filters applied to species predictable by vegetation types, plus an additional two filters, one of which requires the site to be inspected for suitable habitat features (such as rock outcrops, wetlands, riparian zones, etc.). If a site addresses all seven filters for a species, then further assessment is required by doing either a 'threatened species survey' or an 'expert report'.

Threatened species survey

This is a targeted search for a species to determine its presence or absence and to estimate either its area of habitat (for fauna) or number of individuals (for flora) at a site. It must be undertaken at the appropriate time of year for the species and in accordance with the [Threatened Species Survey and Assessment: Guidelines for Developments and Activities](#).

Expert report

This is essentially a habitat assessment for a species to determine its likely presence or absence and to estimate either its area of habitat (for fauna) or number of individuals (for flora) at a site. It can be undertaken at any time of the year.

Species not predictable by vegetation types are assessed by measuring the area of habitat or the number of individuals at a site.

Calculating biodiversity credits

Biodiversity credits are calculated on the basis of the change in biodiversity values at a site. The change in values is the difference between the current values and the predicted future values at a site. At a development site, there will be a loss in biodiversity values due to the impacts of the development. At a biobank site, there will be a gain in biodiversity values due to the effects of management actions.

The change in biodiversity values is determined by assessing the current values of site and then using the rules and methods in the methodology to predict the future values. For example, at a development site, the methodology allows you to predict losses for a range of different types of impacts, including due to full or partial clearing, or clearing associated with asset protection zones or to create urban parklands, etc.

The credits are calculated using a software tool developed by OEH called the [BioBanking Credit Calculator](#).²² The calculator calculates credits in accordance with the equations in the methodology, the data contained in the biodiversity databases, and the data that was collected during the survey and assessment of biodiversity values at a site.

²² <http://www.environment.nsw.gov.au/biobanking/calculator.htm>

The Credit Calculator calculates two types of biodiversity credits:

Ecosystem credits

These are the credits generated by:

- Vegetation (vegetation types)
- Threatened species predictable by vegetation types.

Species credits

These are the credits generated by threatened species not predictable by vegetation types.

Offset rules

The methodology identifies a number of offset rules that apply to BioBanking that aim to ensure the 'like for like' principle is met.

An offset (biobank site) for a development may be located anywhere in NSW subject to the *Threatened Species Conservation (Biodiversity Banking) Regulation 2008* (NSW) and offset rules. As identified in the Regulations, a biobank site cannot be located on land reserved under the *National Parks and Wildlife Act 1974* (NSW) or on land subject to existing offsets.

The offset rules are as follows:

For ecosystem credits, an offset must contain:

- The same vegetation type to that impacted, OR
- Another vegetation type that is more scarce (with a lesser percentage cleared) and is within the same 'vegetation formation'²³ to that impacted, AND
- Suitable habitat for all threatened species impacted, which means an offset site must be suitable in terms of not only vegetation types for each species, but also in terms of other habitat requirements, such as patch size and vegetation condition.

For species credits, an offset must contain known or likely habitat (for fauna) or individuals (for flora) for all threatened species impacted.

It is important to remember that the offset rules are applied to each zone, which means that credits to offset a development may be purchased from more than one biobank site.

The key thing that determines the location of a biobank site relative to a development site is the distributions of the threatened species impacted. For example, if a development impacts on habitat for the Cumberland Plain land snail, which only occurs on the Cumberland Plain, credits can only be purchased from biobank sites

²³ A vegetation formation is the broadest classification of vegetation in NSW. This rule prevents, for example, a wetland being used to offset impacts on a rainforest.

located on the Cumberland Plain. However, if a development impacts on a threatened species that occurs in all coastal areas from northern to southern NSW, credits can be purchased from biobank sites that contain suitable habitat for that species along the coast of NSW.