



# environmental defender's office new south wales

## Submission on the DECC Guidelines for Biodiversity certification of environmental planning instruments

21 December 2007

### The EDO Mission Statement

*The EDO's mission is to empower the community to protect the environment through laws, recognising:*

- *the importance of public participation in environmental decision making in achieving environmental protection*
- *the importance of fostering close links with the community*
- *the fundamental role of early engagement in achieving good environmental outcomes*
- *the importance of indigenous involvement in protection of the environment*
- *the importance of providing equitable access to EDO services across NSW.*

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## 1. Introduction

The Environmental Defender's Office of NSW (EDO) welcomes the opportunity to provide comment on the Working Draft: *Guidelines for Biodiversity Certification of Environmental Planning Instruments*. The EDO is a community legal centre specializing in public interest environmental law and policy.

The EDO has some serious concerns about the scientific rigour of the proposed biodiversity certification process.

The biodiversity certification (**biocertification**) process gives the Minister for the Environment the ability to certify an Environmental Planning Instrument (**EPI**) if he/she is satisfied that it will lead to the overall improvement or maintenance of biodiversity values (*Threatened Species Conservation Act* (TSC Act) s 126(G)(1)). A key effect of biocertification is that it removes the requirement under the TSC Act for the need to undertake threatened species assessments (such as the 'Assessment of Significance' and the 'Species Impact Statement' (**SIS**)) for proposed developments (although SISs are still required where developments are proposed in areas of critical habitat listed under the TSC Act).

It is essential that accurate and comprehensive assessment of impacts is not watered down or bypassed by a streamlined certification process. Detailed site-based assessments of significance and impacts cannot be substituted for by desk-top assessments of very substantial areas. Strategic planning must be underpinned by accurate and ground-truthed data.

The EDO has previously commented on the draft Growth Centres Conservation Plan (**the GC conservation plan**), which was prepared to support biocertification of the Growth Centres State Environmental Planning Policy (**SEPP**). The GC conservation plan represents an example of how the draft guidelines may be applied in practice. Our main conclusion after analyzing the GC conservation plan and obtaining advice from our expert scientific register, was that the draft plan did not adequately identify the biodiversity values of the Growth Centres (which is the fundamental first step) or adequately assess the impacts of the SEPP. We are not convinced that implementation of the bio-certified SEPP will improve or maintain biodiversity values.

Our comments on the draft guidelines should therefore be read in conjunction with our previous submission on the GC conservation plan (which can be found at: [www.edo.org.au/edonsw/site/policy.php](http://www.edo.org.au/edonsw/site/policy.php)).

Our comments on the draft guidelines relate to:

- Potential benefits of biodiversity certification
- Targets for protecting biodiversity values
- Determining biodiversity values
- The definition of improve or maintain biodiversity values

- Criteria for determining high biodiversity value
- The use of biodiversity offsets
  - Limitations to the use of biodiversity offsets
  - Principles for the use of offsets
- Monitoring and reassessment of biocertification

## 2. Potential benefits of biodiversity certification

The biocertification process aims to achieve a form of strategic conservation planning and shifts the assessment of impacts of developments from a site scale to a landscape scale. We recognize there are benefits with such an approach because:

1. Species and ecosystems function at a landscape scale – species are not confined to specific sites and depend on the surrounding landscape to persist. A landscape is therefore an appropriate unit of assessment.
2. Assessment of impacts of developments on a site by site basis does not adequately address cumulative impacts, which can only be effectively addressed through strategic conservation planning.

However, we have serious concerns about aspects of the biocertification process and the draft guidelines, which will potentially negate any such potential benefits (see below).

## 3. Targets for protecting biodiversity values

The draft guidelines identify that regional conservation plans will determine the conservation goals to apply to EPIs, and where these are not available, the best available regional information will be used.

We support an approach where local targets fit within, and contribute to, broader regional biodiversity objectives and targets. However, we have the following comments:

1. The targets in the draft Lower Hunter Regional Conservation Plan are based on JANIS criteria. The draft guidelines are not clear on how JANIS criteria will be applied to each EPI. For example, will each EPI be required to meet the target for protecting 15% of each vegetation type in reserves, or the target for fauna population persistence? If this is not the case, how will the JANIS criteria be applied at a local level?
2. We are unclear about what targets will be used where there is no regional conservation plan. For example, the GC conservation plan did not use JANIS criteria to set targets. The objective that applied to the plan was ‘improve or maintain biodiversity values’, but the plan did not translate this objective into targets. No targets were set in relation to any of vegetation

extent, vegetation condition, vegetation types, habitat types, habitat quality, threatened species persistence, special landscape features, or off-reserve targets.

#### 4. Determining biodiversity values

The draft guidelines identify the types of data that may be used to identify biodiversity values in an EPI and identify two types of biodiversity assessments – regional assessments and local assessments.

The draft guidelines do not specify the minimum level of data required to adequately assess biodiversity values. We are concerned that biodiversity values will largely be determined based only on existing data, even where this data is inadequate.

For example, the GC conservation plan only used existing data – the type and extent of ecological communities and Wildlife Atlas records of threatened species. We are of the view that the data used was inadequate to assess biodiversity values because:

1. There is little evidence in the scientific literature that the presence of threatened species indicates the presence of a wider range of species or indicates overall biodiversity.
2. Wildlife Atlas records represent ‘ad-hoc’ and not systematic surveys and provide a very incomplete picture of the presence of threatened species. Also, they do not provide an indication of the size or significance of populations. We understand a number of significant threatened species populations/habitat in the Growth Centres were missed and not protected (T. James, pers. comm.).
3. The type and extent of ecological communities may not provide adequate information on vegetation condition, habitat types, and habitat quality, which are important in determining biodiversity values, and do not predict the presence of many threatened species.
4. The GC conservation plan did not consider the value of habitat corridors in protecting biodiversity at a landscape scale. Landscape connectivity was only considered in relation to vegetation extent surrounding a vegetation patch, and no consideration was given to whether a patch was linked to other patches.

The draft guidelines should provide clear guidance on the minimum level of data required to adequately assess biodiversity values to ensure that an adequate and consistent approach is taken across EPIs. The draft guidelines should require Councils to analyze existing data against these minimum data requirements. Where

requirements are not met, Councils should be required to undertake additional work using expert input and local expert knowledge to fill data gaps.

We are of the view that minimum data requirements should include:

1. The extent, type, and condition of ecological communities, including threatened ecological communities.
2. The location of rare and threatened species' populations. Wildlife Atlas records are not adequate and many threatened species are not predictable by vegetation types. Systematic surveys may be required to fill data gaps.
3. The location of known and potential habitats for rare and threatened species. Systematic surveys and habitat modelling may be required to fill data gaps.
4. Areas of special conservation significance, such as large patches, habitat corridors, riparian corridors, late-successional areas, and aquatic ecosystems.
5. Areas important for strategic restoration and improvement.

## **5. The definition of improve or maintain biodiversity values**

The draft guidelines identify that, in order for an EPI to improve or maintain biodiversity values, areas of high biodiversity value must be protected and any clearing of non-high biodiversity value areas must be offset by actions to improve biodiversity values elsewhere.

It is vital that high biodiversity value areas are identified, and offsetting is undertaken, in an objective, scientifically rigorous, and transparent way. However, we have serious concerns about the criteria for determining high biodiversity value areas (and therefore also the definition of improve or maintain biodiversity values). We also have serious concerns about the widespread use of offsets to protect biodiversity values (see below).

### **5.1 Criteria for determining high biodiversity value**

The draft guidelines define areas of high biodiversity value as areas that support:

1. An ecological community that is threatened or >70% cleared AND in a patch size and configuration that is regarded as viable in the long-term.
2. A population of a threatened species that cannot withstand or recover from a loss of habitat at a sub-regional level.

All other areas are regarded as non-high biodiversity value.

We have the following main concerns about the criteria:

1. The criteria do not clearly define or provide guidance on patch viability or threatened species persistence and therefore leave significant room for the Minister to make subjective judgments on whether an ecological community is viable in the long term or whether a threatened species can withstand or recover from a loss of habitat at a sub-regional level. This undermines the scientific objectivity and transparency of the biocertification process.
2. Not defining patch viability or threatened species persistence also potentially allows high biodiversity value areas to be defined differently for each EPI, which undermines a consistent approach to biodiversity conservation across EPIs. For example, the GC conservation plan defined viability (and high biodiversity value areas) using six criteria (two criteria related to patch size and configuration). Vegetation that met all six criteria was defined as high viability, while all other vegetation was defined as low viability, which could be cleared and offset. Are Councils seeking biocertification able to define viability using different criteria to that used in the GC conservation plan?
3. We have significant concerns about the six criteria used in the GC conservation plan to define viability for vegetation (and high biodiversity value areas). While some of the criteria were ecologically valid, in our view, their application in combination would mean that many vegetation patches of significant conservation value, including many threatened ecological communities and habitat corridors, would be regarded as low value and therefore would be able to be cleared and offset.
4. We have significant concerns about how the GC conservation plan determined whether a threatened species could withstand or recover from a loss of habitat at a sub-regional level. The judgments on whether a threatened species population should be protected or could be offset in order to ensure persistence at a sub-regional level were highly subjective. No scientific analysis was undertaken on the probability of persistence of threatened species based on predicted habitat loss using standard tools.
5. The biodiversity value of a site is determined by a large range of biodiversity attributes, many of which are not accounted for in the criteria (eg. vegetation condition, habitat quality, structural complexity, surrounding vegetation cover, adjacency to large patches, etc). Also, the criteria do not consider the functional value of vegetation in maintaining biodiversity at a landscape scale (eg. as a habitat corridor, stepping stone, buffer zone, riparian corridor, etc).
6. Many ecological communities exist in a degraded state and may be regarded as being non viable in the long-term. The criteria therefore potentially allow

threatened or scarce ecological communities to be cleared down to zero in an EPI (ie. there is no 'safety net' for ecological communities that exist largely in a degraded state). The criteria must include consideration of irreplaceability (eg. conservation status, rarity) irrespective of patch size or configuration to ensure the protection of threatened ecological communities.<sup>1</sup>

7. The draft guidelines indicate that the draft BioBanking Assessment Methodology can be used to determine high biodiversity value areas. However, the criteria in the draft guidelines are different than the criteria determining high biodiversity value areas in the draft BioBanking Assessment Methodology (the 'red flag' criteria'). This also undermines a consistent approach to biodiversity conservation across EPIs.
8. We are unclear about the scientific basis for the 70% cleared threshold. This is consistent with the targets in the *National Objectives and Targets for Biodiversity Conservation 2001-2005*.<sup>2</sup> However, these targets appear to be based largely on policy decisions rather than science.<sup>3</sup>

The draft guidelines are not clear in relation to how/whether Council documents that identify biodiversity values within a Local Government Area (LGA) (eg. biodiversity strategies) or other government documents such as recovery plans will be used to determine high biodiversity value areas and/or used to refine the criteria in the draft guidelines for determining these areas. For example, we understand that the Liverpool City Council Biodiversity Strategy identified many more areas of high biodiversity value vegetation than the GC conservation plan did for the Liverpool LGA (T. James, pers. comm.). However, many of these additional areas were not protected under the GC conservation plan. It is important that local biodiversity strategies and recovery plans are taken into account in determining high biodiversity value areas.

## 6. The use of biodiversity offsets

The draft guidelines identify that developments may proceed in areas that are not identified as high biodiversity value areas provided any losses are offset by actions taken elsewhere.

### 6.1 Limitations to the use of biodiversity offsets

We have serious concerns about the widespread use of biodiversity offsets because we are of the view that the use of offsets to meet a goal of 'improve or maintain' biodiversity values has significant limitations.

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<sup>1</sup> Bekessy, S. et al. (in press) 'The biodiversity bank cannot be a lending bank'.

<sup>2</sup> Commonwealth of Australia (2001) *National Objectives and Targets for Biodiversity Conservation 2001-2005*, Canberra.

<sup>3</sup> Pressey, R. et al. (2003) 'Formulating conservation targets for biodiversity patterns and process in the Cape Floristic Region, South Africa' *Biological Conservation* 112: 99-127.

We have outlined our general concerns about biodiversity offsets in previous submissions (please see ‘Submission on the use of environmental offsets under the EPBC Act’ and ‘Preliminary identification of key issues relating to the biobanking assessment methodology’ at [www.edo.org.au/edonsw/site/policy.php](http://www.edo.org.au/edonsw/site/policy.php)).

Gibbons and Lindenmayer (2007)<sup>4</sup> have identified the limitations of biodiversity offsets, which relate to:

1. The gain in biodiversity values that can be achieved relative to the loss:
  - a. Offsets that involve the protection of existing good quality vegetation may result in a loss equivalent to the area impacted.
  - b. Offsets that involve the restoration of habitats are subject to significant scientific uncertainty in terms of the gains that can be achieved.
2. The difficulty in measuring the equivalency of any gain in biodiversity values relative to the loss:
  - a. Ecosystems are very complex and biodiversity values are difficult to quantify. No two patches of vegetation have equal biodiversity value.
  - b. Methodologies to quantify biodiversity values must necessarily be relatively simplistic and based on a number of significant assumptions.
3. The time-lag between losses in biodiversity values and gains: offsets almost always involve a short-term loss in exchange for a long-term gain.
4. The difficulty in ensuring compliance: offsets have a poor track record of compliance and considerable resources are required to ensure compliance.

The draft guidelines do not explicitly recognize all of these limitations. We support clear recognition of the limitations of biodiversity offsets upfront in the draft guidelines. Such recognition provides important guidance on the circumstances where the use of offsets can be consistent with an ‘improve or maintain’ goal.

## 6.2 Principles for the use of offsets

While we are opposed to the widespread use of offsets due to the above significant limitations, we recognize that offsetting can contribute to the protection of biodiversity in certain circumstances.

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<sup>4</sup> Gibbons, P. and Lindenmayer, D. (2007) ‘Offsets for land clearing: No net loss or the tail wagging the dog?’ *Ecological Management and Restoration* 8: 26-31.

Based on the limitations of biodiversity offsets, Gibbons and Lindenmayer (2007)<sup>5</sup> have set out principles that provide guidance on the circumstances where biodiversity offsets can be consistent with an ‘improve or maintain’ goal, which is where:

1. The biodiversity values to be lost are unviable in the long-term under the current land-use or management regime and that regime is unlikely to change.
2. The functional value and habitat value of the vegetation to be lost can be adequately restored elsewhere with confidence.
3. The impacts of a development do not cause an unacceptable temporary risk to biodiversity values or cause an irreversible impact.
4. The offsets are protected and managed in perpetuity.
5. The offsets are monitored and subject to adaptive management to ensure that predicted gains translate into actual gains.
6. There is adequate compliance, involving mandatory compliance audits and a risk assessment regarding likely compliance prior to approval.

In consideration of our previous comments on the use of offsets in other submissions and the above principles, we have the following comments on the principles for the use of biodiversity offsets provided in Attachment 2 of the draft guidelines:

***Principle 1 – Impacts must be avoided and mitigated first.***

We support this principle because it recognizes that offsets are subject to significant limitations, which mean, in the context of an ‘improve or maintain’ goal, that strong priority must be given to protecting existing vegetation. This principle is also consistent with the hierarchy in other jurisdictions (eg. Victoria, Western Australia).

The appropriate hierarchy is:

1. First, avoid losses and protect biodiversity *in situ*.
2. Second, mitigate impacts to the greatest reasonable extent.
3. Third, offset remaining impacts as a last resort.

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<sup>5</sup> Gibbons, P. and Lindenmayer, D. (2007) ‘Offsets for land clearing: No net loss or the tail wagging the dog?’ *Ecological Management and Restoration* 8: 26-31.

We submit that this principle should also include:

1. A requirement that developers provide a statement identifying avoidance and mitigation measures to be implemented and providing justification for the proposed use of offsets for any remaining impacts.
2. Clear guidance on how DECC will decide whether a development has avoided and/or mitigated impacts to the greatest reasonable extent (eg. requirements for best practice on-site measures).

*Principle 5 – Offsets must be underpinned by sound ecological principles.*

This principle states that protecting existing high quality habitat can be an appropriate offset. While we recognize that the removal of threatening processes can be an appropriate offset, we note that there are significant ‘additionality’ issues (see below) associated with this offset. We are of the view that protecting existing high quality habitat can only be an appropriate offset when that habitat is under real threat of clearing or significant decline in quality. In other cases, there will be a net loss of habitat equivalent to the area impacted.<sup>6</sup>

This principle also suggests that the complete reconstruction of habitat is less preferable as an offset than improving existing habitat because of the risks and uncertainties involved. We generally agree with this principle, although there may be some circumstances where reconstruction may provide some biodiversity benefits for some species<sup>7</sup> (eg. where an offset creates a habitat corridor). We are of the view that reconstruction of habitat is only an appropriate offset where there is a reasonable level of certainty that gains can be achieved and the risk of unacceptable impacts is low (eg. where impacts occur on very low quality vegetation of no conservation significance).

*Principle 7 – Offsets must be enduring.*

We support this principle, which says that an offset must offset an impact for the period over which the impact occurs, which will usually be required in perpetuity.

We submit that this principle should also include:

1. A requirement to consider the long-term viability of offset sites and clear guidance for determining long-term viability (eg. consideration of patch size, shape, condition, connectivity, etc). The current approach is inconsistent, because long-term viability is required to be considered at a development site.

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<sup>6</sup> Gibbons, P. and Lindenmayer, D. (2007) ‘Offsets for land clearing: No net loss or the tail wagging the dog?’ *Ecological Management and Restoration* 8: 26-31; Bekessy, S. et al. (in press) ‘The biodiversity bank cannot be a lending bank’.

<sup>7</sup> Munro, N.T et al (2007) ‘Faunal response to revegetation in agricultural areas of Australia: A Review *Ecological Management and Restoration* 8: 199-207.

2. Clear guidance on how an offset will be secured in perpetuity and the minimum levels of security required. The GC conservation plan showed that offsets for the Growth Centres are subject to a variety of protection mechanisms (eg. re-zoning, development controls), some of which, in our view, may not adequately protect biodiversity values in perpetuity.
3. A requirement that offsets are managed in perpetuity and clear guidance on how in perpetuity funding will be ensured (including where land is donated to a government agency) and on-going management responsibilities determined.
4. Clear guidance on liability in cases where an offset site is impacted in the future.

*Principle 8 – Offsets must be agreed prior to the impact occurring.*

A key limitation of offsets is the time lag between losses in biodiversity values due to a development and gains in values due to an offset.

We submit that this principle should also include:

1. Where the success of an offset is uncertain, a requirement that impacts should not be allowed until a developer has demonstrated that the offset is established and is providing benefits to compensate for the impacts.
2. A requirement that a developer demonstrate with a reasonable level of certainty that the time lag between losses and gains would not cause an unacceptable temporary risk or an irreversible impact.

We note that the GC conservation plan did not comply with this principle. It involved taking to account offsets that had not yet been identified and had only been assessed on a preliminary basis using very crude measures of biodiversity value.

*Principle 9 – Offsets must be quantifiable.*

We support this principle, which aims to ensure that gains in biodiversity values are equivalent to losses. This principle should also ensure that certain types of offsets such as ‘indirect offsets’ are not considered appropriate as offsets.

The draft guidelines indicate that offsets will be quantified using the draft BioBanking Assessment Methodology. We have made preliminary comments on the draft methodology that outline some of our key concerns (please see ‘Preliminary identification of key issues relating to the biobanking assessment methodology’ at [www.edo.org.au/edonsw/site/policy.php](http://www.edo.org.au/edonsw/site/policy.php)).

We support an approach to quantifying offsets that recognizes the risks and uncertainties associated with the gains in biodiversity values that offsets can achieve (eg. very little is known about the value of revegetation for threatened fauna<sup>8</sup>). We submit that any quantification methods must be subject to uncertainty analysis and incorporate an uncertainty 'buffer' to account for such risks and uncertainties.<sup>9</sup>

We strongly oppose the use of indirect offsets such as those identified in the draft recent Commonwealth Department of Environment and Water Resources offsets policy (eg. contributions to research)<sup>10</sup> because the benefits of indirect offsets are unquantifiable and uncertain (eg. outcomes of new research must be implemented to achieve a gain, which is dependent on adequate funding, etc). (For further detail on our concerns regarding indirect offsets and the proposed principles for offsetting under the EPBC Act 1999 see our ANEDO submission 3<sup>rd</sup> December 2007 at [www.edo.org.au/edonsw/site/policy.php](http://www.edo.org.au/edonsw/site/policy.php)).

*Principle 10 – Offsets must be targeted.*

This principle does not provide clear guidance on the principle of 'like for like', which is a key issue in relation to the use of offsets and is fundamental to the credibility of any offset policy. For example, can impacts on vegetation type X and threatened species X be offset with a vegetation type of greater conservation significance but that only provides habitat for threatened species Y? Can known habitat be offset with potential habitat? Can impacts on a habitat corridor only be offset by the creation of or improvements to another habitat corridor?

We submit that this principle should provide clearer guidance on what 'like for like' means in terms of biodiversity attributes such as vegetation or habitat types, vegetation or habitat quality, potential habitat, threatened species, and landscape function (eg. patch size, habitat corridors, riparian corridors, recharge zones, etc). We note that the Victorian offset policy<sup>11</sup> recognizes the biodiversity value of large old trees and stands of scattered old trees and includes these in considerations of 'like for like', which we also support.

The draft BioBanking Assessment Methodology has a set of offsetting rules (credit profiles) that are essentially the rules for 'like for like' that apply to BioBanking. We are not clear whether this principle is consistent with the 'like for like' rules under the assessment methodology.

*Principle 11 – Offsets must be located appropriately.*

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<sup>8</sup> N.T. Munro, D.B. Lindenmayer, and J. Fischer (2007) 'Faunal response to revegetation in agricultural areas in Australia: A review' *Ecological Management and Restoration* Vol. 8 pp 199- 207.

<sup>9</sup> Bekessy, S. et al. (in press) 'The biodiversity bank cannot be a lending bank'.

<sup>10</sup> See [www.environment.gov.au/epbc/publications/draft-environmental-offsets.html](http://www.environment.gov.au/epbc/publications/draft-environmental-offsets.html)

<sup>11</sup> See

[www.dpi.vic.gov.au/DSE/nrenlwm.nsf/LinkView/99ADB544789FE7D4CA2571270014671E49A37B2E66E4FD5E4A256DEA00250A3B](http://www.dpi.vic.gov.au/DSE/nrenlwm.nsf/LinkView/99ADB544789FE7D4CA2571270014671E49A37B2E66E4FD5E4A256DEA00250A3B)

This principle is unclear as it says that offsets must offset an impact in the same region but also says that offsets must be located in ‘reasonable proximity to the region’. Also, the term region is not defined (eg. does region mean CMA region or IBRA region?).

The GC conservation plan provided that many offset areas would be located outside the Growth Centres. We are concerned about the potential for ‘double counting’ of offset sites in these cases. For example, Council A offsets the impacts on Council A’s LGA by locating an offset site in Council B’s LGA. Council B then wishes to gain biocertification. The potential exists for Council B to count Council A’s offset site towards meeting the improve or maintain test.

We submit that this principle should include:

1. A requirement that offsets are located within the same IBRA region, or preferably, IBRA sub-region. This is consistent with the current focus by governments on biodiversity conservation at a regional scale, it generally enables stricter adherence to the principle of ‘like for like’ (eg. the offset may benefit the threatened species population that is impacted), and it minimizes the risk of impacts on genetic variation.
2. A requirement that offsets are located strategically to ensure maximum biodiversity gains (eg. to increase the size of vegetation patches, or create or improve habitat corridors and ‘stepping stones’, or create buffers around sensitive areas).<sup>12</sup> This may also assist in addressing impacts of climate change on biodiversity. This principle should clearly identify the basis for locating offsets (eg. in accordance with certain criteria or conservation plans).

*Principle 12 - Offsets must be beyond existing requirements.*

We support this principle, which recognizes that an offset must deliver conservation outcomes that would otherwise not have been achieved (ie. be ‘additional’).

We submit that this principle must also include clearer and more detailed guidance to determine whether an offset is additional. Examples of appropriate criteria are:

1. An offset must go beyond existing regulatory requirements.
2. An offset must not be funded or likely to be funded in the future under another program.
3. An offset must go beyond the core business and responsibilities of a government agency.

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<sup>12</sup> Fischer, J. et al. (2006) ‘Biodiversity, ecosystem function, and resilience: ten guiding principles for commodity production landscapes’ *Front Ecol Environ* 4(2): 80-86.

4. An offset must go beyond best practice on-site management.

***Principle 13 - Offsets must be enforceable and audited and monitored.***

We support this principle. Adequate compliance is vital to ensure that gains in biodiversity values at the offset site are equivalent to losses at the development site. The importance of compliance has been highlighted by studies of the United States' wetland mitigation banking scheme, which have showed that lack of compliance has contributed to the decrease in wetland quality and quantity in the US.<sup>13</sup>

This principle does not provide clear guidance on the period over which monitoring will be required in general terms, the circumstances where remedial actions will be required, and the types of remedial actions that may be appropriate, including additional offsets.

This principle should also include:

1. A requirement that monitoring be undertaken within an adaptive management framework to enable management flexibility where predicted outcomes are not being achieved.<sup>14</sup>
2. A requirement that measures of success are clearly articulated to ensure the success of an offset can be adequately determined.

**7. Monitoring and reassessment of biocertification**

The draft guidelines do not specify requirements to monitor whether biocertification of an EPI is maintaining or improving biodiversity values. DECC is required to monitor compliance with any conditions of biocertification, but we are unclear whether such conditions will include ecological monitoring. It appears the assumption is that the biocertification process will accurately predict impacts on biodiversity values. We submit that predicted impacts will be very uncertain. The draft guidelines should include a requirement for ecological monitoring and provide clear guidance on monitoring requirements and appropriate measures of success.

The draft guidelines also do not provide clear guidance on what occurs in circumstances where biodiversity values that have been missed or are discovered for the first time are identified after biocertification has been granted to an EPI (eg. a previously unknown population of a threatened species is identified on land zoned for development). The draft guidelines should require a reassessment of biocertification where previously unknown significant biodiversity values are

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<sup>13</sup> Race, M. and Fonseca, M. (1996) Fixing compensatory mitigation: what will it take? *Ecological Applications* 6(1) 94-101.

<sup>14</sup> Gibbons, P. and Lindenmayer, D. (2007) 'Offsets for land clearing: No net loss or the tail wagging the dog?' *Ecological Management and Restoration* 8: 26-31.

identified. The biocertification process must be adaptable to ensure the adequate protection of previously unknown biodiversity values.

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