

Biodiversity Offsets – An Overview of Selected Recent Developments:

New Zealand – Where to from here?

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Introduction

Biodiversity offsets are conservation actions intended to compensate for the residual, unavoidable harm to biodiversity caused by development projects, so as to ensure no net loss of biodiversity. Before developers contemplate offsets, they should have first sought to avoid and minimise harm to biodiversity¹.

Recent experience with regulatory regimes, such as wetland and conservation banking in the USA, tradable forest conservation obligations in Brazil and habitat compensation requirements in Australia, Canada and the EU, has been supplemented by growing interest in the potential of voluntary biodiversity offsets.

In July 2004 a research monograph² examined the statutory context for, and the emerging practice of, biodiversity offsets and environmental compensation under the RMA. It considered the use of offsets and environmental compensation in a number of jurisdictions and compared the practice in those jurisdictions with the New Zealand situation.³ The monograph concluded that the practice of environmental compensation in New Zealand is ad hoc and variable and needs to be put on a sounder footing. It recommended a cautious approach to the use of environmental compensation and stated:

Our conclusion is that a far more robust regime needs to be developed in New Zealand if environmental compensation is to be used to protect significant biodiversity and landscape values. At present, we appear to be learning as we go rather than learning from the best and worst of international practice. Central government should provide not only more explicit policy direction but should also promote good practice guidelines. This is imperative in order to improve the quality of policies and rules for environmental compensation in second generation planning instruments (including the New Zealand Coastal Policy Statement).⁴

This paper notes developments since July 2004 in the use of the concept of biodiversity offsets (and environmental compensation generally), both in New Zealand and internationally. We consider the extent to which concerns raised in the 2004 monograph have been addressed, and suggest possible ways forward in New Zealand.

¹ IUCN (The World Conservation Union), *Biodiversity Offsets: Views, experience and the business case*, November 2004 (www.iucn.org/themes/business/Biodiversityoffsets). This definition, while widely accepted, is but one of a range of definitions of biodiversity offsets or green offsets. There remains considerable debate about the appropriate definition and scope of biodiversity offsets.

² Borrie, N. Memon, A., Skelton, P. (July 2004) *An International Perspective on Environmental Compensation: Lessons for New Zealand's Resource Management Regime*. Research monograph. Environment, Society and Design Division Lincoln University, Christchurch, New Zealand.

³ Principally *Arrigato Investments Limited v Rodney District Council* [2000] NZRMA 241; *Transit New Zealand v Auckland Regional Council* A100/2000; *Rutherford Family Trust v Christchurch City Council* C26/03; *Memon & Others v Christchurch City Council* C116/03.

⁴ At 8.5, page 38

Judicial consideration in New Zealand under the Resource Management Act

The 2004 monograph discussed a number of decisions of the Environment Court which considered the use of offsets and compensation. The paper's conclusion was that the Environment Court has struggled to deal with matters related to environmental compensation, as a direct consequence of policy ambivalence.

Since July 2004, the Environment Court has further discussed the legal and policy foundations of biodiversity offsets, generally under the rubric of the more general concept of "environmental compensation".

In *Stapylton-Smith v Banks Peninsula District Council*⁵ the applicant sought subdivision consent to create three lots in a rural part of Banks Peninsula. The applicant proposed vesting one lot (with conservation values) in the community by way of offset or compensation.

The Court noted that the fundamental difficulty with the concept of environmental compensation in this context is how one translates the adverse effect on natural character, outstanding landscape and visual amenity into the benefits that are achieved by having greater recreational access or possible native revegetation. It contrasted the situation with one where it is possible to replace biodiversity by compensating with similar biodiversity, such as restoration and rehabilitation, to try and achieve the same diversity and representation of species.⁶

The Court stated that the concept of compensation for out of kind (dissimilar) values is far more difficult:

As this Court has commented on numerous occasions, it is not possible to directly equate one particular type of value with another, ie the loss of natural character with improved public access. Although both matters are ones recognised under section 6 of the Act, this cannot in itself mean that they are always equivalent. There is no accounting process that can be adopted to measure some form of economic equivalence, ie 1000 trees for one hectare of access.⁷

The Court was not concerned whether the lot to be set aside was characterised as mitigation or environmental compensation:

In our view nothing particularly turns on the way in which Lot 2 is presented. It can either constitute an element of mitigation of the recognised adverse visual effects and effects on natural character and outstanding landscape or it could fit within the more generic description of environmental compensation.⁸

The Court went on to adopt the comment of the Environment Court in *Memon and others v Christchurch City Council*⁹ about when compensation might be appropriate:

Reflecting more on this, it seems to us that useful tests as to whether the environmental compensation may be sufficiently linked to a development proposal are that it should, so far as possible, be:

- (1) A similar area of land or water of comparable conservation (eg, ecological, landscape or tangata whenua) worth to what is being developed so the questions of how to compare quantifiable value with non-quantified value do not have to be answered; and

⁵ C191/04

⁶ Para 91

⁷ Para 92

⁸ Para 96

⁹ C116/03

- (2) Managed so as at least to maintain and usually to restore or improve the qualities which it is being conserved for; and/or
- (3) Protected in its ownership usually by vesting it in the local authority (or perhaps a trust) or under binding covenants/consent notices registered against titles (at the time of subdivision).

Taking all of the matters into consideration, the Court found that the proposal did not represent sustainable management and consent for the subdivision was declined.

In *Mabey v Thames Coromandel District Council*¹⁰ the Court considered an offer of a wetland conservation area as offset or compensation for an undersized lot in a proposed subdivision. The District Plan provided for conservation lots, however it did not explain the reasons why there was such a provision. The Court stated¹¹:

There is reference to preserving and/or enhancing areas of indigenous vegetation and indigenous wildlife habitats, including the promotion of ecosystem completeness and habitat continuity. This clearly includes conservation lots but ... we are left without further guidance as to the intellectual approach to, or relative value of, these conservation lots in the exercise of the discretion. Thus although this approach may be susceptible to analysis in terms of the research monograph of A Memon, P Skelton and N Borrie's *An International Perspective on Environmental Compensation* (July 2004, Lincoln University), we have inadequate information in the Plan.

In the absence of clear direction from the Proposed Plan there are many ways this conservation lot may be described: as a quid pro quo, enhancement, environmental compensation, a bio-diversity off-set, mitigation or as a trade-off. When we refer to the approval of an undersized lot on the basis of acceptance of a legally protected area for conservation purposes, as a natural asset for the community, we will use the vernacular phrase trade-off for that lot. In doing so we do not derogate from the approach of other cases or recent analysis, but use the term to encompass all such possibilities.

The Court decided that the development, together with the 10ha conservation lot and other mitigation, would not have a significant adverse impact on the natural character of the coastal environment, and granted consent.

In *Solid Energy New Zealand Limited v West Coast Regional Council*¹², a proposed open cast coal mine would disturb part of the habitat of kiwi and a native land snail. In order to mitigate these effects, the applicant proposed the creation of a predator-proof reserve of some 17ha; an extensive predator control programme in a wider area; ongoing monitoring and management; and research on snails' habitat, feeding requirements and breeding. The Court noted that in considering the value of these measures the parties had deliberately not attempted to differentiate between the minimisation, mitigation and compensation. In general terms the Court used the word mitigation to cover all these possibilities.¹³

In concluding that consent should be granted, the Court stated:

We have also concluded that the lowering of predators generally within the area and the predator-proof area will bring about an overall reduction in the predation of both kiwi and *patrickensis* in the short to long term. Combined with the other management plan steps, including identifying preferable habitats and food sources for *patrickensis*, we have concluded on the balance of probabilities that these programmes will be successful. In other words, that they will achieve both enhancement of the numbers and habitats of those particular indigenous species...

¹⁰ A017/2005

¹¹ Paras 10-11

¹² *Solid Energy New Zealand Ltd v West Coast Regional Council*, C074/05

¹³ Para 61

Earlier in this decision we have considered effects on the habitat of the great spotted kiwi and *Powelliphanta "patrickensis"*. We accept that habitat will be lost, but we found that the protection from predation in other areas offered by the applicant will afford benefits to these species which compensate for the loss of habitat.¹⁴

On appeal, the High Court confirmed the Environment Court's decision¹⁵. The appellant had argued that Solid Energy's proposals did not mitigate the loss of habitat, in the sense that it was minimised. Instead, the appellant argued that the mitigation plans were in essence an "off-site" environmental benefit by way of a trade-off to compensate for the loss and, therefore, not within the terms of s 5(2)(c) of the Act. The High Court stated:

... Although, as Mr Reid argued, the exclusion and control areas are either wholly or partially beyond the mined area itself, it seems to me artificial to characterise them as "offsite" proposals. The exclusion area must necessarily be offsite, but nearby, so that the populations of kiwi and *patrickensis* can be transferred to it. The much larger control areas are also necessarily "offsite" to a major degree, since in terms of size they significantly exceed the area of the proposed mining activity. But, thereby, it does not seem to me that these measures are properly characterised as offsite compensation.¹⁶

Moreover, the Court indicated that the distinction between mitigation and compensation was of no significance in the situation before it:

Standing back and assessing the proposals in the round with reference to their potential effects on kiwi and *patrickensis*, the Court's findings are to the effect that the populations in the Waimangaroa area will probably be enhanced in the long term. Regardless that this outcome may be described as one achieved by compensatory measures, it is nonetheless a valid and significant consideration which the Court was entitled to bring to account.¹⁷

In *Whangamata Maori Committee et al v Waikato Regional Council*¹⁸ the Court recommended¹⁹ that resource consent for a new marina be granted on condition that remedial works be carried out upstream of estuary site. The Waikato Regional Policy Statement provided for avoiding, remedying or mitigating adverse effects through a variety of means including appropriate offsite mitigation:

The Regional Policy Statement] reveals a flexible approach for protecting bio-diversity areas, including, where appropriate, through remediation or mitigation measures where adverse effects cannot be avoided. In this instance, the marina proposal is dependant upon infilling of the salt marsh area previously discussed, but we hold that suitable remediation is to be undertaken in the vicinity of the site so as to maintain and protect the area's bio-diversity and coastal wetland system by looking to provide for a wetland area of comparable size and nature via the reinstatement and enhancement programme proposed by the society and endorsed by both the regional and territorial bodies.²⁰

The most recent and most comprehensive discussion of environmental compensation is *JF Investments Limited v Queenstown Lakes District Council*²¹. There, the Environment Court was considering an application for a land use consent for a residential platform situated in an outstanding natural landscape in the Queenstown District. In compensation for the proposed

¹⁴ Paras 135, 190

¹⁵ *Royal Forest and Bird Protection Society Inc v Buller District Council*, CIV 2005-485-1240, High Court, Christchurch

¹⁶ Para 88.

¹⁷ Para 90.

¹⁸ *Whangamata Maori Committee et al v Waikato Regional Council*, Environment Court A173/2005, Judge Bollard

¹⁹ Since the marina is a restricted coastal activity, a recommendation is made to the Minister of Conservation

²⁰ Para 73

²¹ *JF Investments Limited v Queenstown Lakes District Council*, Environment Court C48/2006

location of a house in that landscape, the applicant offered to remove wilding pines from the uphill half of its site, to carry out work up to the value of \$100,000 removing pines from elsewhere in the surrounding landscape, and proposed covenants not to further subdivide the allotment, nor to place additional houses on it in the future.

The Court began by defining environmental compensation as:

Any action (work, services or restrictive covenants) to avoid, remedy or mitigate adverse effects of activities on a relevant area, landscape or environment as compensation for the unavoided and unmitigated adverse effects of the activity for which consent is being sought²².

It then provided a comprehensive review of earlier judicial discussions of environmental compensation. After discussing the decisions in *Di Andre Estates Limited v Rodney District Council* and *Arrigato Investments Limited v Rodney District Council*, the Court stated²³:

Like most Environment Court decisions, Arrigato does not refer to environmental compensation as such; rather it refers to 'incentives' and 'enhancement'. Despite that the decision has been criticised as allowing a resource consent to be purchased. Professors Ali Memon and Skelton with Ms N Borrie write in their research monograph, *An International Perspective on Environmental Compensation: Lessons for New Zealand's Resource Management Regime*:

... Perhaps the major difficulty with [Arrigato] ... is that the perceived adverse effects of the proposed subdivision (additional houses in a coastal environment) had no connection with the existing degraded landscape. Consequently, it is not really a case about environmental compensation as understood internationally but rather a case about trading off one value for another or as some might see it "buying" a resource consent.

Unfortunately that issue was not raised in the appeals to the High Court and Court of Appeal in Arrigato. Nor is that part of the International Perspective paper consistent with its earlier description of international practice where off-site compensation is discussed at some length as environmental compensation, e.g. the USA's 'mitigation banks' whereby development of one wetland is mitigated by protection of another elsewhere.

Counsel did not refer us to them but we are aware that there are other cases where environmental compensation was assessed by the Environment Court although the remedial or enhancement work was not identified as such. For example, in the Waipara landfill case — *Transwaste Canterbury Limited v Canterbury Regional Council* — the Court allowed preparation for a new landfill site to remove areas of remnant lowland forest, in return for increased protection and maintenance of other larger and hence ecologically more desirable remnants, as part of 400 hectares of land being turned into a conservation area. The Court concluded:

Overall the application has been presented to the Court as a package. Discernable benefits to the wider environment of Kate Valley and to the region as a whole are proposed as part of this total package. Thus in any consideration under Part II and in the integration necessary under section 5, these benefits are advanced as a critical feature.

The Environment Court concluded that it is not uncommon for the Environment Court to allow some adverse effects, even on matters of national importance, if there are sufficiently useful and appropriate offsetting or remedial works.²⁴

One of the concerns raised in the 2004 Monograph was whether the RMA provided adequate legislative basis for the adoption of environmental compensation. In *JF*

²² Ibid at para 8.

²³ Paras 13, 14

²⁴ Para 17

Investments, the Court found, first, that the concept was embodied with the sustainable management purpose of the RMA, being within the wider definition of a 'remedy'.²⁵

In addition, the concept was consistent with the wider definition of "effects" in the RMA:

The very wide and inclusive definition of 'effects' in section 3 of the Act suggests that effects in section 5(2)(c) may be (in addition to the characteristics specifically mentioned) direct or indirect, simple or confused. Further, observed 'effects' may have multiple causes. Water and air pollution are classic examples: who can say from which farm downstream bugs (faecal coliforms) come, or which fireplace or car is emitting particles to the air? Since the RMA recognises such causal complexity we consider it also contemplates complex solutions to achieve better overall environmental outcomes.²⁶

The Court also found that section 5(2)(c) can be interpreted widely to allow for application of the concept:

The final part of section 5(2)(c) should also be read in a broad way. First, the remedying of adverse effects of 'activities on the environment' in section 5(2)(c) does not only refer to effects caused by the activity for which a resource consent is sought. We hold that the phrase refers also to adverse effects of other, including past, activities on the site and offsite on neighbouring parts of the relevant environment, area or landscape. Secondly, and more importantly 'environment' is very widely defined in the Act. Most human activities involving natural and physical resources could be said to have some positive effects on the 'environment'. In every decision under the Act a choice or compromise is almost always made between limiting the economic and social conditions of people by avoiding the adverse effects of their activities or enabling individual's wellbeing by allowing some adverse environmental effects to occur, duly remedied or mitigated to the appropriate extent. Environmental compensation is one type of choice or compromise.²⁷

After discussing sections 6 and 7 of the RMA which supported this interpretation of section 5, the Court concluded:

Every applicant for resource consent is entitled to have their application considered on the basis that if the positive effects of the proposed activity outweigh the adverse effects of that activity when they are weighed in the light of all relevant objectives and policies and with the appropriate multipliers ... then they should be granted consent unless in the particular case the objectives and policies of the relevant plan, or Part 2 matters trump everything. However, if an applicant fears that consent will be refused because some of those matters will not be satisfied — then under the enabling and efficiency provisions of Part 2 of the Act he or she can offer environmental compensation to add to the positive benefits of their proposed activity.²⁸

The Court then turned to section 104 of the RMA and discussed whether environmental compensation was a matter it could take into account as being a matter it considers relevant and reasonably necessary under section 104(1)(i).

It held that the ultimate question for a consent authority on any application for resource consent is to determine whether granting or refusing consent better achieves the purpose of the Act. Part of that determination involves resolving whether adverse effects of activities on the relevant environment are being appropriately avoided, remedied or mitigated. It concluded that consideration of environmental compensation — being remedying of adverse effects of other activities than that for which consent is sought — may be, to a greater or lesser extent depending on factors we identify shortly, reasonably necessary to the ultimate determination.²⁹

²⁵ Paras 20 and 21

²⁶ Para 22

²⁷ Para 23

²⁸ Para 30

²⁹ Para 35

In the Court's view, the context of section 104(1)(i) was important to the issue of whether environmental compensation can be considered. It noted that there is a continuum of remedial or mitigating actions which may be appropriate. A payment of compensation to persons adversely affected may in unusual circumstances be the best remedy.³⁰

While the Court accepted that how to value environmental compensation is very complex it stated that this should not of itself prevent the assessment being attempted:

The difficulties of obtaining such (e)valuations must not prevent the attempt if sustainable management of resources requires it. The practical answer is usually that if the proposed remedial or mitigatory action is the repair of damage of the same kind as the adverse effects of the activity, it is easier to accept as not only relevant, but reasonably necessary as well. Similarly, if the proposed remedy is also in the same area, landscape, or environment then its benefits, compared with the costs of the proposed activity, are more easily seen. Conversely, if the offered environmental compensation is too far in distance, kind or quality from the adverse effects caused by the proposed activity then it may be no longer reasonably necessary, but merely expedient for the developer to offer.³¹

The question of weight to be placed on the compensation needs to be decided on the facts of each case, and where compensation is found to be inadequate consent could be declined. In providing guidance on when environmental compensation might be appropriately considered, the Court concluded:

We conclude that off-site work or service or a covenant, if offered as environmental compensation or a biodiversity offset, will often be relevant and reasonably necessary under section 104(1)(i) if it meets most of the following desiderata:

- (1) it should preferably be of the same kind and scale as work on-site or should remedy effects caused at least in part by activities on-site;
- (2) it should be as close as possible to the site (with a principle of benefit diminishing with distance) so that it is in the same area, landscape or environment as the proposed activity;
- (3) it must be effective; usually there should be conditions (a condition precedent or a bond) to ensure that it is completed or supplied;
- (4) there should have been public consultation or at least the opportunity for public participation in the process by which the environmental compensation is set;
- (5) it should be transparent in that it is assessed under a standard methodology, preferably one that is specified under a regional or district plan or other public document.³²

Recent developments in other jurisdictions

The 2004 monograph surveyed the use of environmental compensation and biodiversity offsets in a number of countries.³³ This part of the paper notes significant developments in policy and law in those other jurisdictions since July 2004.

³⁰ Para 36

³¹ Para 37

³² Para 42. The Court noted that it was assisted in coming to this view by the IUCN paper.

³³ It surveyed examples from wetland banking in the US, Germany, the Netherlands, the United Kingdom, Victoria and New South Wales. For more recent discussions of the use of biodiversity offsets in these and other jurisdictions, see the IUCN paper (footnote 1) and McKenney, B. (March 2005) *Environmental Offset Policies, Principles and Methods*. A review of Selected Legislative Frameworks, Biodiversity Neutral Initiative (www.biodiversityneutral.org).

New South Wales

In December 2006, the Threatened Species Conservation Amendment (Biodiversity Banking) Act 2006 commenced. This Act establishes a biodiversity offset and land banking scheme by which the NSW Government intends to introduce a market-based approach to addressing the impacts of development on biodiversity. The scheme recognises that biodiversity offsets were being negotiated on a case by case basis, which was leading to considerable uncertainty.

The biodiversity offset and land banking scheme offers landowners an opportunity to earn credits for creating sites which maintain or improve biodiversity. Developers can then purchase those credits from a central register and use the credits to offset the negative impact of development on biodiversity.

The scheme is subject to a state-wide two-year trial starting in September 2007, and a formal review. If it goes ahead, the scheme is expected to commence around September 2009 and participation will be voluntary. The Threatened Species Conservation Amendment (Biodiversity Banking) Act establishes the framework for the scheme but many of the operational details and rules to support the framework are yet to be developed. It is anticipated that many of these will be developed during the trial period, in consultation with stakeholders and participants.

Biobanking sites may be established on land by means of biobanking agreements entered into between the Minister for the Environment and a landowner. The agreements will require or authorise the landowner to carry out positive environmental management and/or rehabilitation actions in respect of the land. Management actions carried out under a biobanking agreement are exempt from the requirement for development consent or environmental assessment under the Environmental Planning and Assessment Act 1979.

Biodiversity credits may be created in respect of past, current and future management actions carried out on land in accordance with a biobanking agreement. The biobanking assessment methodology, yet to be established, will set out the management actions for which biodiversity credits may be created and will be used as the basis for calculating the number and class (if any) of the biodiversity credits.

Biobanking agreements are to be registered on title to land and generally will have effect as binding agreements on the owner (and subsequent owners) in perpetuity. Biobanking agreements may be enforced by any person, by action taken in the Land and Environment Court.

Biobank sites are exempt from land tax. For the purposes of land tax assessment, the value of a parcel of land is to be reduced by an amount proportionate to the area that is the subject of a biobanking agreement.

The Biobanking Act establishes a system for trading in biodiversity credits, so that once created and registered (in a register of biodiversity credits to be established by the Director-General of the Department of Environment and Conservation, the credit may be transferred to any person, subject to the regulations.

Transfers of biodiversity credits have effect when registered under the scheme. Part of the funds generated from the sale of the credits are to be held on trust (in a Biobanking Trust Fund and bank account to be established by the Minister) for the landowner, who receives this as funding for management actions carried out under their biobanking agreement.

Once created, a biodiversity credit remains in force unless it is cancelled or retired under the scheme. A credit cannot be cancelled if it has been transferred to a bona fide purchaser without notice of the circumstances that are grounds for the cancellation of the credit, eg, if

the application for the creation of the credit contained materially false or misleading information. A credit may be retired when it is used as an offset in connection with a development proposal, retired voluntarily or retired for the purpose of complying with a direction given under the Biobanking Act. For example, a biobank site owner (or former owner) may be directed to retire credits if the Minister considers that biodiversity credits were created for a management action that was not carried out, or not completed, in accordance with the relevant biobanking agreement.

Under the Biobanking Act, biobanking statements may be issued for development and activities to which the Environment and Planning Assessment Act applies. An application for a biobanking statement for a development must include an assessment of the impact, or likely impact, of the development on biodiversity values. The Biobanking Act does not specify details as to what form this assessment will be required to take. If the development is likely to impact on biodiversity values, developers can:

- propose offset works to minimise biodiversity loss or establish their own biobank site to generate credits;
- purchase or retire biodiversity credits to offset the impact or likely impact; and/or
- change the project so that no biodiversity loss occurs.

The Biobanking Act recognises that biodiversity loss should be avoided and/or minimised before considering the use of offsets, as the Director-General may refuse to issue a biobanking statement if the developer has not demonstrated that all cost-effective onsite measures to minimise the impact of the development on biodiversity values are being, or will be, carried out.

Ultimately, a biobanking statement may be issued only if the development will improve or maintain biodiversity values. The statement may be issued subject to conditions, including as to the onsite measures to be carried out to minimise biodiversity loss or the retirement of biodiversity credits.

Western Australia

In January 2006, the Western Australia Environmental Protection Authority (EPA) published a position statement on environmental offsets.³⁴ A position statement is issued by the EPA under the Environmental Protection Act 1996. Position statements set out the overriding principles which the EPA would refer to when giving advice to the government, the public, proponents and decision makers to clarify their responsibilities in relation to managing particular environmental issues.

The EPA was concerned that various offset policies and approaches were being developed and used across all areas of environmental regulation in Western Australia without common overarching principles to guide the use of offsets.

Offsets are defined in the Statement as:

"Environmentally beneficial activities undertaken to counterbalance an adverse environmental impacts, aspiring to achieve no net environmental loss or a net environmental benefit".

From the EPA's perspective, offsets should only be viewed as an environmental impact management tool and not a "project approval" negotiation tool. Offsets should only be used when all other options (ie, avoidance, minimisation, rectification, and reduction in order of preference) have been properly addressed. Offsets cannot be a substitute for normal environmental management responsibilities.

³⁴ Environmental Protection Authority (Government of Western Australia), *Environmental Offsets – Position Statement 9*, January 2006

The statement distinguishes between direct offsets and contributing offsets. A direct offset is any environmentally beneficial activity undertaken to counteract an adverse environmental impact with the goal of achieving no net loss or a net environmental benefit. Examples of direct offsets include ecosystem restoration, rehabilitation, re-establishment activities or pollution sequestration. Direct offsets may not be available in every circumstance.

Contributing offsets are any environmentally beneficial activities undertaken to complement the direct offset activity. They include protection mechanisms but also management, education, research, removal of threats or other activities having a proven environmental benefit – or contributions to an approved bank, credit trading scheme or trust fund.

The statement recommends that offsets should be used with the aspirational goal of achieving a 'net environmental benefit', rather than maintaining the environment. The use of offsets should be guided by the following principles:

- environmental offsets should only be considered after all other reasonable attempts to mitigate adverse impacts have been exhausted
- an environmental offset package should address both direct offsets and contributing offsets
- environmental offset and impact should ideally be 'like for like or better'
- positive environmental offset ratios should apply where risk of failure is apparent (the size of the offset to impact ratio should be greater than one to one and be proportional to both the importance of the environmental asset being impacted and the risk that the offset may not achieve a net environmental benefit)
- environmental offsets must entail a robust and consistent assessment process
- environmental offsets must meet all statutory requirements
- environmental offsets must be clearly defined, transparent and enforceable, and
- environmental offsets must ensure a long lasting benefit.

The EPA's advice in this area differentiates its approach in terms of the type of environmental asset that is being dealt with. In relation to critical assets which represent the state's most important environmental assets, the EPA notes that its advice will adopt a presumption against approval, however, where projects are approved by the State Government, the EPA states that approval should be conditional on the consideration of onsite impact mitigation and development and implementation of an acceptable offsets package for significant residual adverse impacts. The EPA advises that the project proponent should develop an environmental offset package using advice from relevant environmental agencies and applying the principles in a position statement.

In relation to high value assets, which represent environmental assets that are in good to excellent condition, are considered valuable by the community and/or the government but are not identified as critical assets, the EPA advises that proposals and offset activities for these assets may be referred to and assessed by the EPA on a case-by-case basis. The EPA advises that its Guidance Statement 33, *Environmental guidance for planning and development*, would be a useful resource for proponents when considering the suite of pertinent environmental assets.

In relation to low to medium value assets, which are those assets that are in less than good-to-excellent condition, the EPA advises that offset activities do not need to be addressed through the EPA processes but would be dealt with by relevant government agencies.

The EPA is shortly to release a draft Guidance Document on environmental offsets.³⁵ Guidance Documents are issued by the EPA to assist proponents, and the public generally, to understand the minimum requirements that the EPA expects to be met during the assessment process.

South Australia

The South Australian Native Vegetation Act 1991 and the Native Vegetation Regulations 2003 including provisions requiring the clearance of native vegetation to be offset by an environmental gain referred to as a "significant environmental benefit" ("SEB"). The Act controls the clearance of all native vegetation. Unless exempted under the regulations, all native vegetation clearance must be approved by the Native Vegetation Council.

An SEB may be achieved through:

- management of existing remnant native vegetation (eg, control of pest plants and animals)
- restoring degraded native vegetation to a functioning ecosystem
- revegetating cleared areas to recreate a functioning ecosystem

A landholder may undertake the SEB work, or may seek to make a payment to the Native Vegetation Council (paid into the Native Vegetation Fund), which the Council will use to fund similar work elsewhere.

In June 2005 the South Australia Department of Primary Industries and Resources and the Department of Water Land and Biodiversity Conservation issued draft guidelines on how the introduction of SEB will affect those involved with mining or petroleum activities, which had previously been exempt from the requirements of the Native Vegetation Act. Proposed mining/petroleum/geothermal operations should ensure:

- that there is no practicable alternative that would avoid the clearance of native vegetation, the clearance of less native vegetation or the clearance of less significant native vegetation;
- the retention and enhancement of biodiversity, native vegetation and landscape values;
- the restoration of native vegetation by land users to maintain and enhance biodiversity, protect water quality and conserve soil resources;
- that biological diversity of vegetation is maintained through appropriate land management practices including a suite of measures from vegetation retention, re-establishment and biodiversity credit trading schemes, through to sustainable use and production using best practice management techniques;
- that where native vegetation clearance is unavoidable, measures are undertaken to counterbalance the loss of that vegetation to achieve a significant environmental benefit either on the site or within the same region either by works undertaken by the proponent, or through payment of money into the native vegetation fund (as established under the native vegetation act);
- that the clearance of higher value vegetation is offset by a higher significant environmental benefit), and

³⁵ Sippe, R. Director Strategic Policy, Western Australia EPA. Presentation to Australian Centre for Minerals Extension and Research (ACMER) workshop: Biodiversity Offsets for the Minerals and Energy Industries, Perth, 1 April 2007

- that the significant environmental benefit supports the highest possible biodiversity outcomes in terms of quality, position in the landscape, and ongoing management.³⁶

The intent of significant environmental benefit is twofold:

- a. To replace the immediate environmental values lost through the clearing of native vegetation; and
- b. To achieve a net gain that contributes to improving the condition of the environment and biodiversity of the region³⁷.

The guidelines recognise that mining and petroleum licensees often do not own the land they operate on and may not be able to protect or revegetate cleared land. The guidelines propose a number of alternatives to direct offsets on the same piece of land, including:

- acquiring land and either managing existing vegetation or undertaking revegetation/restoration activities.
- supporting research.
- removal of threats or managing existing vegetation.
- working with local government to undertake revegetation on land owned by local bodies.
- targeted feral animal reduction programmes aimed at assisting the recovery of specific species.

Clearance of native vegetation might not be approved where the vegetation is of such high value that sufficient significant environmental benefit to "compensate" for the loss cannot be achieved (e.g. last known remaining stand of critically endangered species or habitat)³⁸.

EU Environmental Liability Directive

The EU Environmental Liability Directive³⁹ goes beyond existing national and European Commission environmental protection legislation by establishing a framework of environmental liability requiring the prevention and, where that fails, remediation of various categories of environmental damage.

The directive refers to damage that has significant adverse effects on achieving or maintaining favourable conservation status of species and natural habitats protected under EC legislation.

Biodiversity damage is required to be remedied by returning the environment to its baseline condition; in the case of damage to land, the risk to human health must be removed. If the harm to biodiversity cannot be reversed, then 'complementary remediation' by improvement of a similar resource or service may be required to the extent the original resource cannot be fully restored. 'Compensatory remediation' may also be required to compensate society for the loss or enjoyment of the resource or service.

³⁶ Government of South Australia, Dept of Water, Land and Biodiversity Conservation: *Guidelines for a native vegetation Significant Environmental Benefit policy; for the clearance of native vegetation associated with the minerals and petroleum industry*, at page 4.

³⁷ Ibid at page 7.

³⁸ Ibid at page 12.

³⁹ EU Directive 2004/35/E2 21 April 2004

South Africa

In March 2007, the Western Cape Department of Environmental Affairs and Development Planning released a draft *Guideline on Biodiversity Offsets*.⁴⁰ The guideline states that biodiversity offsets may need to comprise either single or composite areas to compensate adequately for residual biodiversity loss. An acceptable measure of the residual loss is the starting point for determining an appropriate offset. Offsets are then calculated by multiplying this measure by a basic offset ratio which is linked to the particular conservation status of the affected ecosystem:

- for 'critically endangered' ecosystems there is to be a 30:1 ratio (in such cases an offset would be appropriate in exceptional circumstances only)
- for 'endangered' ecosystems a ratio of 20:1 is required
- for 'vulnerable' ecosystems a ratio of 10:1 is required and
- no offset is required for 'least threatened' ecosystems

The area determined by the basic offset ratio is then adjusted by a range of context-specific considerations, including:

- condition of the affected habitat
- significance of residual impacts on threatened species
- significance of residual impact on special habitats
- significance of residual impact on important ecological corridors or process areas and
- significance of residual impact on valued biodiversity underpinning ecosystem services

For a biodiversity offset to contribute effectively to biodiversity conservation in the Western Cape, the guideline requires that offsets should be located in an 'offset receiving area'. These are areas identified in bioregional or biodiversity plans, or other areas identified as being targeted for the expansion of protected areas, and/or irreplaceable for meeting conservation targets.

The guideline notes that the long term security of the offset is vital to achieve the intended benefits to biodiversity. For this reason, a careful offset design process must be followed, namely:

- measuring the residual negative impacts on biodiversity to determine an appropriate offset;
- determining the most appropriate type of offset: 'like for like habitat', 'trading up' (where habitat of a higher priority for biodiversity conservation than that affected by development is targeted as an offset) or monetary compensation
- determining the size of the offset required to compensate for residual negative impacts on biodiversity and, where the proponent intends to purchase, lease or secure habitat as an offset, the optimum location of the offset
- deciding on the best way to secure the offsets: by gifting to a government agency, by stewardship agreements or acquiring 'like for like or better' habitat
- developing an Offset Management Plan for management, monitoring, evaluation and auditing of the offset

Biodiversity offsets in New Zealand - a possible way forward

Despite the guidance by the Environment Court in the *JF Investments* case and others, the practice of biodiversity offsets and environmental compensation remains ad hoc and variable as noted in the 2004 monograph.

⁴⁰ DEADP, 2007 Provisional Guidelines on Biodiversity Offsets, Cape Town

In 2004, the World Conservation Union (IUCN) and Insight Investment published a survey of the use of biodiversity offsets around the world.⁴¹ It reached a number of key conclusions and made a series of recommendations. In light of the continued application in New Zealand of biodiversity offsets (and environmental compensation generally) as demonstrated by the Environment Court decisions discussed in this paper, these conclusions and recommendations may be useful in the New Zealand context. Additionally, New Zealand may now look to significant experience in some Australian states on the use of the concept and consider what lessons can be learned and how experience gained there can be adapted for this country.

The first conclusion of the IUCN paper was that there is a need to clarify the definition and understanding of the concept. The use of offset vocabulary varies around the world as does the assumption as to the concept within which offsetting activities take place.⁴² The definition used at the start of this paper (taken from the IUCN paper) makes it clear that integral to the concept of biodiversity offsets is their proper placement within the "mitigation hierarchy". That is:

...developers should first seek to avoid, minimise and mitigate the harm their projects cause to biodiversity (where "minimise" means to design a project in such a way as to reduce harm, and "mitigate" means to alleviate the residual harm, to the extent possible). Only then should they offset the residual, unavoidable impact of the project on biodiversity. We believe that offsets, if they are firmly anchored within the context of this mitigation hierarchy, do not provide a "licence to trash" the environment.⁴³

The 2004 monograph touches on the confusion surrounding the use of the concept in New Zealand, comparing it with how the concept is understood in other jurisdictions. This confusion was also noted by the Court in *JF Investments*⁴⁴. Whereas the Environment Court has generally considered the issue as one of "environmental compensation", much of the international literature, including the IUCN paper, is concerned with "biodiversity offsets". Perhaps this inconsistency has arisen because the Court in many of the cases (*Memon*, *Stapylton-Smith*, *JF Investments*) has been dealing with issues of landscape impacts and amenity effects, which are not specifically biodiversity related.

Much of the discussion in other jurisdictions is about how biodiversity values can be assessed and measured. The objective is then to offset the effects of a development on biodiversity by securing an equivalent (or better) biodiversity or conservation gain. Such a gain is most readily achieved where "on-site in kind" values are identified – that is, like for like, on or close to the site in question. Conceivably, it can also be achieved by "off-site out of kind" offsets (eg, the protection of a lowland podocarp forest in a separate ecological district to 'compensate' for the removal of an area of beech forest). The challenge with biodiversity offsets (of whatever nature) is to establish a transparent and coherent means of identifying the overall objectives of adopting such an approach, as well as how the relevant values are measured and protected.

The wider concept of "environmental compensation" on the other hand has to take account of the fact that a whole range of conservation and amenity values are not susceptible to "valuation" in a manner similar to biodiversity values. Adverse effects on landscape and amenity values for example, cannot be "offset" by an equivalent positive effect. It is not possible to recreate an outstanding landscape for one which has been adversely affected by development. In this context, it is, however, possible to consider whether positive effects

⁴¹ IUCN (The World Conservation Union), *Biodiversity Offsets: Views, experience and the business case*, November 2004 (www.iucn.org/themes/business/Biodiversityoffsets).

⁴² This was identified by Memon et al, (see footnote 2) at page 2.

⁴³ Page 81

⁴⁴ *JF Investments Ltd*, op.cit., at para 13

from the development in question can be offered which result in an overall "gain" such that a proposal overall is acceptable.

The Court in *JF Investments* has articulated what is in effect a hybrid set of considerations taken primarily from papers dealing with biodiversity offsets and has adapted them in the context of landscape and amenity considerations. The question is whether this is the preferable approach, or whether there should be policy direction that deals with biodiversity offsets as a specific subset of environmental compensation.

Part of the issue of definition is the question of what is the appropriate objective for a biodiversity offset: should the aim be no net loss of biodiversity, net conservation gain or significant gain?

A second key conclusion from the IUCN paper is about the importance of establishing a metric or a means of measuring biodiversity value. The paper states:

Limits to the current knowledge of biodiversity and its complexity mean that it is extremely difficult to establish a "currency" to measure both loss of biodiversity caused at a development site and the conservation that is needed to offset it elsewhere, so as to be confident that there is "no net loss". Much more work is needed in this area to develop socially acceptable and workable methodologies to measure both biodiversity loss and gain. Developing such a 'currency' may be a challenge, but some ecologists have indicated that it should be possible to identify measures that give a reliable indicator of no net loss. Such approaches can also help show where a net benefit has been achieved.⁴⁵

It is beyond the scope of this paper to discuss in any detail the various assessment procedures and methods which are being used around the world or are currently in development. Some examples are:

- In the US wetland banking system, there are a wide range of assessment tools and metrics, with no standardised approach. This has led to considerable criticism and a concern whether in many cases the objective of no net loss is being achieved (or at least can be demonstrated to be achieved)⁴⁶.
- The Victorian Department of Sustainability and Environment has developed the "habitat hectare" approach.⁴⁷ This approach uses observable physical habitat components in an assessment which is standardised for each ecotype, using its 'benchmark'. The benchmark represents the average characteristics of mature stands of native vegetation of the same community type in a natural or undisturbed condition. Applying the benchmark to the impact and potential offset sites enables the amount of change in the condition of biodiversity to be compared. The assessment is made in terms of a site's condition and landscape context. Site condition measures how much the site has changed from a benchmark, by looking at:
 - the presence of large old trees (for woodlands and forests)
 - the amount of tree canopy cover (for woodlands and forests)
 - the amount of logs (for woodland forests)
 - the cover and diversity of the understorey
 - the presence of appropriate regeneration
 - how weedy the site is

⁴⁵ Page 82

⁴⁶ See example Salzman, J & Ruhl, J *No Net Loss – Instrument Choice in Wetlands Protection*. Duke Law School, Research Paper No. 1, September 2005.

⁴⁷ Parkes, D. et al (2003) Assessing the quality of native vegetation: the habitat hectares approach. *Ecological Management and Restoration* 4 (Supplement), s29-s38; Gibbons, P. et al (2007) Offsets for Land Clearing: No Net Loss or the tail wagging the dog? *Ecological Management and Restoration* 8(1) 26-31.

- how much leaf litter there is

Landscape context considers how well the patch of vegetation can cope with natural fluctuations and disturbances, such as old trees dying, bushfires and floods. It is measured by the size of the area of vegetation that the site is within, as well as links to, and the amount of, neighbouring patches of vegetation. Assessments are carried out in accordance with a detailed Vegetation Quality Assessment Manual and an Index of Wetland Condition.

- The South Australian Guidelines set out how Significant Environmental Benefit is to be calculated, based on the area to be cleared and the state of the vegetation.⁴⁸
- NSW is preparing a draft Biobanking Assessment Methodology and regulations which are intended to be released in July 2007.
- The proposed Canterbury (New Zealand) Natural Resources Regional Plan Wetlands Chapter refers to "wetland offsets" and seeks to manage Canterbury's wetlands by enabling development, provided that there is no overall reduction of significant wetlands⁴⁹. No overall reduction allows losses "provided they are offset by equivalent gains"⁵⁰. Appendix WTL1 provides for an assessment methodology for calculating the conservation value of wetlands. There clearly remains a need for the development in New Zealand of an appropriate and nationally accepted assessment methodology or methodologies of this nature.

A further key conclusion of the IUCN paper was that an offset regime benefits from clear priorities. Offsets need to be consistent with agreed conservation objectives:

Offsets, at their heart, involve a trade-off. They are predicated on the notion that biodiversity in one place may be damaged (or even destroyed) in return for biodiversity protected and conserved elsewhere. In order to make such trade-offs, however, it is essential to reach broad agreement on conservation priorities; to assign values that allow a determination of what can be damaged, what needs to be protected; and what can be traded for what.⁵¹

In New Zealand there are currently a range of policy documents dealing with conservation priorities and objectives. They include:

- The State of the Environment Report (1997).⁵²
- The New Zealand Biodiversity Strategy (2000).⁵³
- The New Zealand threatened species list.⁵⁴
- The list of waters of national importance, 2004.⁵⁵
- Biodiversity inventory and monitoring: A review, 2005.⁵⁶

⁴⁸ See footnote 36.

⁴⁹ Environment Canterbury, *Variation 1 Proposed Natural Resources Regional Plan, Chapter 7: Wetlands*, publicly notified 3 July 2004, hearings on the chapter are likely to be held during 2007. There do not appear to be any submissions seeking to change the use of "no overall reduction".

⁵⁰ *Ibid* at pages 7-13.

⁵¹ Page 83.

⁵² Ministry for the Environment (MfE) 1997: *The State of New Zealand's environment*.

⁵³ Department of Conservation (DOC) and Ministry for the Environment(MfE) 2000: *The New Zealand Biodiversity Strategy*, Wellington

⁵⁴ Hitchmough, R., Bull, L., Cromarty, P. (compilers): *New Zealand threatened species classification list*. Occasional publication, Department of Conservation, Wellington

⁵⁵ Chadderton, W.L., Brown, D.J., and Stephens, R.T. (2004): *Identifying freshwater systems of national importance for biodiversity*. Department of Conservation, Wellington.

- Land environments of New Zealand, 2003.⁵⁷
- The New Zealand River Environment Classification 2004.⁵⁸
- Various regional policy statements, regional plans, and district plans throughout the country.

Whether these documents, taken together, provide sufficient guidance on conservation priorities and objectives to assist those designing or deciding upon the appropriateness of biodiversity offsets, should be the subject of discussion.

⁵⁶ Lee, W.G., McGlone, M., and Wright, E. (Compilers) 2005. *Biodiversity inventory and monitoring: A review of national and international systems and a proposed framework for biodiversity monitoring*. Department of Conservation, Wellington.

⁵⁷ Leathwick, J.R., Wilson, G., Rutledge, D., Wardle, P., Morgan, F., Johnston, K., McLeod, M., Kirkpatrick, R. (2003) *Land environments of New Zealand*. Landcare Research, MfE, Auckland.

⁵⁸ MfE and NIWA, Wellington.