REPORT

Department of Conservation

The Role of Monitoring and Compliance in Securing Better Biodiversity Outcomes through Offsetting Arrangements

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Report prepared by:

Tonkin & Taylor Ltd

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Executive summary

Introduction

This report investigates the role of monitoring and compliance in securing better conservation outcomes through biodiversity offsetting arrangements under the Resource Management Act 1991 (RMA). Specific (summarised) objectives include providing:

- an overview of the resource consent monitoring purpose and process under the RMA;
- an assessment of the resource consent monitoring process in relation to biodiversity offsets;
- identification of key issues, constraints, and impediments to effective and efficient processes; and
- options, solutions, and recommendations to help ensure the resource consent monitoring and compliance process functions effectively for biodiversity offsetting.

The report is based on a desktop literature review, in combination with preliminary findings from Marie Brown's research and the author's regulatory experience. The review has included an assessment of resource consent monitoring and compliance processes and experience against the relevant principles, criteria and indicators of the Business and Biodiversity Offsets Programme (BBOP).

RMA consent monitoring

The RMA includes a number of statutory requirements and tools to support an effective and efficient consent monitoring and compliance process (e.g., monitoring requirements, use of bonds, and various enforcement options). However, in the context of biodiversity, there is a general failure by councils to meet statutory requirements or use available RMA tools. Consequently, while there are many examples of consent compliance, a large proportion of consents are not adequately monitored, or are non-compliant, while enforcement of non-compliance is generally low. Issues, constraints and impediments are as follows:

- consent monitoring is often afforded a low priority;
- consent monitoring functions are poorly resourced (i.e. staffing, resources, legal expertise);
- an absence of national guidelines, standards, or training;
- appropriate technical expertise is often unavailable;
- understanding of ecological context is poor due to a general lack of information;
- database and information management, and reporting is inadequate;
- the need for flexibility to account for post-application changes in design details;
- the need for scalability to manage cumulative effects; and
- enforcement inconsistencies.

The described issues, constraints, and impediments under the RMA reflect existing international and national concerns with monitoring and compliance under a biodiversity offsetting framework. However, in the case of the RMA, mechanisms to ensure an effective and efficient monitoring and compliance process are in place, but in practice are often inadequately adhered to or enforced. Implications pertaining to the consent monitoring process are that:

- councils will often fail to meet their statutory requirements and environmental objectives;
- applicants, particularly those that operate across councils will be subject to inconsistencies and inefficiencies through the consent monitoring process; and
- biodiversity and associated ecosystem services will continue to decline.

Biodiversity offsets: monitoring and compliance under the RMA

Tools to support the use of biodiversity offsets are being developed now by BBOP, with global application in mind. The key tool developed by BBOP includes a set of guiding principles and associated draft criteria and indicators. These principles and the draft criteria and indicators that underlie them are the core of BBOP's work to develop best practice for biodiversity offsets and will likely form the foundation for a formal standard around biodiversity offsetting.

Currently, the BBOP principles vary in the degree to which they align with the provisions of the RMA. Moreover, the regulatory context for biodiversity offsets has not been formally clarified in New Zealand and is not formally part of operative RMA documents or processes. Principles are addressed under the proposed National Policy Statement for Indigenous Biodiversity, though as a proposed NPS this document holds less weight than a finalised National Policy Statement.

Despite this, environmental compensation / biodiversity offset type activities sometimes occur under the RMA following the identification of adverse effects and the implementation of appropriate mitigation options through the resource consent process. However, with the exception of a few biodiversity offset pilot projects, approaches to date have been *ad hoc* in that they are not quantifiably assessed, nor do they generally seek let alone adhere to a number of key principles such as no net loss/ net gain biodiversity outcome, or a mitigation hierarchy.

A formalised biodiversity offset/ no net loss approach requires greater resource, consistency, and rigour to quantify and validate intended conservation outcomes and no net loss. In this regard, biodiversity offsetting could provide the basis for and precipitate improvements in the existing consent monitoring process through:

- increased accountability, rigour, and transparency;
- decreased legal and financial risk through consistency and transparency;
- potential for improved stakeholder relationships through increased certainty, consistency, and transparency;
- improved environmental performance through accountability and process improvements;
- incentives for the development or continued improvement of supporting mechanisms such as integrated databases and monitoring initiatives; and
- the availability of relevant and peer-reviewed BBOP guideline documents, such as BBOP's guide for assessors and auditors to determine compliance with BBOP's Principles, Criteria, and Indicators (PCIs).

To ensure that there is a trigger and motivation for resource consent applicants to consider biodiversity offsets it is first necessary to integrate offsets into the policy framework and the resource consent process. Specifically, the underlying principles, and objectives for biodiversity offsetting might be identified through district and regional plans and the resource consent process, and its practical delivery managed through Ecological/ Biodiversity Management Plans.

To improve the role of monitoring and compliance for biodiversity offsetting arrangements not only requires compliance with consent conditions but also requires consent conditions to generate intended biodiversity outcomes, e.g. no net loss to biodiversity. As such, options and solutions for improving monitoring and compliance operate across the entire resource consent process. The key options and solutions proposed for improving consent monitoring and compliance for biodiversity offsetting include:

- defining and providing for biodiversity offsets via a National Environmental Standard (NES), National Policy Statements (NPSs), Regional Policy Statements (RPSs), Regional and District Plans, objectives, policies, rules, assessment criteria and other methods;
- developing and improving on supporting mechanisms (which are not directly part of the resource consent process but contribute to it);

- developing biodiversity guidelines and tools such as guidelines for assessments of environmental effects, setting consent conditions, monitoring and compliance, and the development and implementation of ecological management plans / biodiversity offset management plans;
- developing sector specific biodiversity guidelines (where appropriate);
- improving council consenting process systems, e.g., councils implementing formal quality management systems and achieving certification of them (e.g., International Organisation for Standardisation, ISO 9001); and
- improving assessment and auditing, possibly using the BBOP guide for assessing and auditing the development and implementation of biodiversity offset management plans against BBOP's Principles, draft Criteria, and Indicators (PCI).

These tools will help to address existing consent monitoring and compliance issues under the RMA and help provide the necessary support to biodiversity offsetting by:

- providing applicants with increased certainty and understanding both pre and post consent application;
- enabling consultants and contractors to compile AEEs and produce associated technical reports, and management plans in a systematic, rigorous, and transparent manner;
- providing a comprehensive framework for council officers to review these documents and set consent conditions (including monitoring and compliance requirements); and
- guiding the design and implementation of ecological management plans/ biodiversity offset management plans.

A key forum for presenting many of these issues is the Regional Council Biodiversity Forum and Local Government New Zealand (LGNZ), and where biodiversity offsetting programmes exist or are being contemplated, individual councils and council officers driving such programmes. We consider that DOC has a key role in facilitating such discussion, and providing supporting technical advice and support (where appropriate), given its pivotal role in undertaking biodiversity offset related research and development work at present.

Without investment by councils to address the issues raised in this report, it is likely (based on overseas experience) that biodiversity offsetting may not move beyond being applied voluntarily by parts of industry, and may miss its potential to contribute positively to broader environmental outcomes and to the resource consent process for all stakeholders. As such, it is important that the issues, implications, and recommendations discussed in this report are given due consideration through the future development, integration, and implementation of biodiversity offsetting systems in resource management processes.

1 Introduction

1.1 Biodiversity offsets: overview and problem definition

Overview

Biodiversity offsets have been defined as "*measurable conservation outcomes resulting from actions designed to compensate for significant residual adverse biodiversity impacts arising from project development and persisting after appropriate prevention and mitigation measures have been implemented. The goal of biodiversity offsets is to achieve no net loss, or preferably a net gain, of biodiversity on the ground with respect to species composition, habitat structure and ecosystem services, including livelihood aspects*"[1]

Internationally, formalised biodiversity offsets are being adopted or considered by a number of countries. Increasingly, this process is being conducted in a standardised and coordinated manner in conjunction with or using resources developed by the Business and Biodiversity Offsets Programme (BBOP). The BBOP is a partnership between companies, financial institutions, governments and civil society organizations to explore and develop biodiversity offsets. The vision and expectation is that *"biodiversity offsets will become a standard part of business practice for those companies with a significant impact on biodiversity. The routine mainstreaming of biodiversity offsets into development practice will result in long-term and globally significant conservation outcomes" (BBOP charter).*

Some see biodiversity offsetting as a solution to problems of competing demands of conservation and development on the earth's biodiversity[2]. This includes: some environmental groups who see environmental offsets as a way to secure 'more and better conservation'; some companies who view them as a mechanism of securing and maintaining their license to operate; and some investors who perceive them as a method to minimise risks associated with impacts on biodiversity[3]. Others, including some environmental organisations and business are unconvinced[5]. In New Zealand it is acknowledged that although the concept of compensation for deleterious environmental effects holds potential, a number of limitations and barriers must be acknowledged or overcome for the desired outcomes to be achieved. To that end, the Department of Conservation is currently assessing the feasibility of applying biodiversity offsetting to New Zealand through the Cross Departmental Research funded (CDRP) Biodiversity Offsets Programme (BOP).

Problem definition

Effective implementation of biodiversity offsetting, like any mitigation requirement, is contingent upon adequate compliance with conditions of consent[4]. Non-compliance can lead to failure to deliver the expected offsets, therefore the development of adequate standards for the monitoring and compliance of consent conditions are critical to success[5]. International experience with biodiversity offsets suggests that one of the greatest weaknesses in ensuring that offset

[1] Business and Biodiversity Offsets Programme (BBOP), 2009. Business, Biodiversity Offsets and BBOP: An Overview. BBOP, Washington, D.C.
[2] K. ten Kate, J. Bishop, R. Bayon. 2004. Biodiversity Offsets: Views, Experience, and the Business Case IUCN, Gland, Switzerland and Cambridge, UK and Insight Investment,
London, UK.
[3] S. Burgin 2008. BioBanking: an environmental scientist's view of the role of biodiversity banking offsets in conservation. Biodiversity Conservation 17: 807 – 816.
[4] Walker, S, Brower, A.L, R.T. Theo Stephens, & W. G. Lee. 2009. Why bartering biodiversity fails. Conservation Letters 2, 149 – 157.
[5] Crowe, M, and ten Kate, K. 2010. Biodiversity offsets: policy options for government: draft for discussion with the BBOP advisory group.

conditions are enforced is a lack of compliance monitoring, and enforcement provisions. For example, in Canada less than 15% of 124 developments associated with fish habitat were compliant with offset conditions[6,7] while in Massachusetts, 54% were non-compliant with offset conditions including 21.9% where there had been no attempt to construct the wetlands required as offsets, and 64.9% were smaller than agreed[8]. In short; most approved offsets fail to meet their objectives or never actually occur because there are no effective compliance provisions ensuring they do so. In approving biodiversity offsets as part of economic development projects, consenting authorities must ensure that adequate systems are put in place to ensure that compliance does occur. Key issues cited by these overseas studies include:

- an absence of a regulatory framework which adequately provides for biodiversity offsets;
- poor resourcing for monitoring and compliance;
- an absence of guidelines, standards, or training; and
- technical complexities associated with measuring biodiversity and the effects of management on biodiversity[9].

The problems associated with monitoring and compliance are recognised by BBOP which addresses this in Principle 8[10]along with the criteria and indicators that sit underneath Principle 8.

> *Principle 8 - Long-term outcomes: The design and implementation of a biodiversity offset should be based on an adaptive management approach, incorporating monitoring and evaluation, with the objective of securing outcomes that last at least as long as the development project's impacts and preferably in perpetuity.*

1.2 Report purpose and objectives

This report has been commissioned by the Department of Conservation through its Biodiversity Offsets Programme, as DOC contract 4325 for professional services dated 27th July, 2011. The general objective of this report is to investigate the role of resource consent monitoring and compliance for securing better outcomes through offsetting arrangements under the Resource Management Act (RMA, 1991). Specific objectives are to:

- conduct a brief overview of the resource consent monitoring purpose and process under the RMA (from statutory requirements through to enforcement);
- undertake an assessment of the effectiveness and efficiencies of the resource consent monitoring process in practice (as it relates to the assessment, negotiation, and implementation of environmental compensation and offsets);
- identify key issues, constraints, and impediments to an effective and efficient process (from development of consent applications to enforcement);
- consider the provision of options and solutions to improve the status quo regarding monitoring and compliance, including a review of emerging tools such as the Business and

[6] Gibbons P, D.B. Lindenmayer, 2007. Offsets for land clearing: no net loss or the tail wagging the dog? Ecological Management Restoration 8:26–31.
[7] Harper DJ, JT Quigley, 2005. No net loss of fish habitat: a review and analysis of habitat compensation in Canada. Environ Management 36:343–355.
[8] Brown S, L.M. Veneman, 2001. Effectiveness of compensatory wetland mitigation in Massachusetts, USA. Wetlands 21:508–518.
[9] Burgin, S, 2008. BioBanking: an environmental scientist's view of the role of biodiversity banking offsets in conservation
Biodiversity Conservation (2008) 17:807–816.
[10] Biodiversity and Biodiversity Offsets Programme 2011: BBOP Principles with Draft Criteria and Indicators, and draft Guidance notes (Consultation version May 2011).

Biodiversity Programme's Principles, Criteria and Indicators auditing framework for biodiversity offsets; and

- list implications and recommendations, including a framework for best-practice guidance, for managing the resource consent monitoring and compliance processes in a biodiversity offsets/no net loss context.

1.3 Methodology

The report is based on a desk-top literature review, interviews with Marie Brown, a (PhD student at the University of Waikato, and the practical regulatory sector experience of the author. The review has included an assessment of resource consent monitoring and compliance processes and experience against the relevant principles, criteria and indicators of the BBOP.

1.4 Scope

This report is limited to the role of resource consent monitoring and compliance for securing better biodiversity outcomes through offsetting arrangements. Herein monitoring and compliance with respect to biodiversity offsets therefore refers to:

- checking compliance with consent conditions;
- assessing the effectiveness of consent conditions;
- monitoring environmental effects of consent activities;
- consent and condition reviews; and
- enforcement action.

Because establishing appropriate conditions in consents is important to the success of biodiversity offsetting, this report has also addressed key information and process requirements to help ensure effective and appropriate conditions can be set in resource consents.

1.5 Structure

This report is broadly structured into two parts.

- Section 2 provides a brief overview of the resource consenting process with a focus on those steps that relate directly to consent monitoring and discusses the effectiveness and efficiencies of this process;
- Section 3 discusses the potential for biodiversity offsetting to improve the current consent monitoring and compliance process and provides options and solutions along with a potential framework for indicating where and how activities relating to biodiversity offsetting may improve the monitoring and consent process; and
- Section 4 draws conclusions and provides recommendations, along with associated actions and roles in the form of a framework table.

2 RMA consent monitoring

2.1 Background

Under the RMA, a key role of Local Government Authorities (LGAs) in their role as consent authorities is to ensure that the sustainable management purpose of the RMA is achieved. This includes, amongst other things, considering whether resource consent applications avoid, remedy, or mitigate adverse effects on the environment. To this end, when applying for a resource consent an applicant is required to complete an Assessment of Effects on the Environment (AEE). An AEE is a process that usually culminates in a written statement that details any actual or potential environmental effects and how the negative (adverse) effects will be avoided, remedied, or mitigated. Dependent on the anticipated issues, the AEE is typically compiled from one or more associated technical reports. These reports and the AEE are generally produced by environmental consultants or contractors, although, where the resource consent is initiated by councils or other government agencies, these documents are usually produced by in-house staff.

Under the RMA and in coastal, regional, or district plans prepared under the RMA there are six types of activity categories. These are ranked according to the expected effects they might have. In ascending order of environmental effects these include: Permitted activity; Controlled activity; Restricted discretionary activity; Discretionary activity; Non-complying activity; and Prohibited activity. These categories determine aspects such as:

- whether a resource consent is required before carrying out the activity;
- what will be considered when making a decision on a resource consent application;
- whether a resource consent must, may or may not be granted;
- whether a resource consent application can be accepted by a consent authority.

Upon receipt of an application, it is the duty of council officers to assess the extent of adverse effects, as per section 104[11] of the RMA. The council officer needs to identify whether any further information and/or specialist advice is needed to process the application and assess the environmental effects further. A common practice is to consider the level of effects along a continuum to ensure that each effect has been considered consistently and, in turn, cumulatively. This continuum may include the following effects in ascending order of environmental impact[12]:

- **Nil effect**- No effects at all.
- **Less than Minor Adverse Effects** - Adverse effects that are discernable day-to-day effects, but too small to adversely affect other parties.
- **Minor Adverse Effects** - Adverse effects that are noticeable but that will not cause any significant adverse impacts.
- **More than Minor Adverse Effects** - Adverse effects that are noticeable that may cause an adverse impact but could be potentially mitigated or remedied.
- **Significant Adverse Effects that could be remedied or mitigated.** - An effect that is noticeable and will have a serious adverse impact on the environment but could potentially be mitigated or remedied.
- **Unacceptable Adverse Effects** - Extensive adverse effects that cannot be avoided, remedied or mitigated.

[11] Section numbers throughout the paper, unless otherwise stated, refer to the current version (as at 21 June 2011) of the Resource Management Act 1991 obtained from www.legislation.co.nz.

[12] Taken verbatim from the Quality planning website http://www.qualityplanning.org.nz/consents/assess-enviro-effects.php

Section 108 of the RMA allows councils to include conditions on resource consents. Conditions may include standards, terms, restrictions or prohibitions. Effective and enforceable consent conditions are essential to ensure that any adverse environmental effects are avoided, remedied or mitigated. Conditions are varied but for applications that have impacts on biodiversity these may include activities listed below:

- avoidance or minimisation of impact on ecologically significant sites;
- limitations on seasons or hours of operations (e.g. outside of nesting or breeding seasons);
- protection of indigenous vegetation or habitat through legal covenants;
- forest, wetland, duneland, grassland, or riparian planting;
- domestic stock exclusion fencing;
- weed and animal pest management;
- rescue and relocation of species to suitable sites;
- removal of barriers to connectivity (e.g. culverts); and
- requirements for monitoring and reporting.

Conditions may include the requirement to provide any of the following pursuant to section 108 and section 108A of the RMA:

- financial contributions;
- land;
- works;
- services; and
- a financial bond.

2.2 Consent monitoring process

Section 35(2)(d) requires every council to monitor resource consents that have effect in its region or district, and to take action in accordance with the RMA to resolve non-compliance matters where this is shown to be necessary.

Types of consent monitoring

The type and frequency of monitoring will depend on the scale and intensity of the activity and the potential environment impacts. Councils sometimes categorise consents once granted according to the expected amount of monitoring necessary, although a consent can be 'upgraded' or 'downgraded' at a later stage. Taranaki Regional Council for example, categorises its consent monitoring into the following three categories[13]:

- **Once-only inspections:** Activities that are not likely to have any long-term harmful effects on the environment, such as the construction of a small culvert or dam, are generally inspected once at the end of a specific work programme, to ensure that the consent conditions are met.
- **Repeated inspections:** These are carried out for activities that suit standardised inspections and are not of significant concern if managed properly.
- **Tailored site-specific consent monitoring programmes:** These programmes are designed for large or complex activities that have the potential to significantly affect the environment. These include landfills, power stations, and large industrial or sewage discharges. The programme is agreed when the consent is granted and is systemically

[13] The relative proportion of consent monitoring that falls into each of these categories has not been quantified to our knowledge. However, it is expected that tailored site-specific consent monitoring programmes constitute a relatively low proportion by number but are of high relative importance with respect to environmental effects.

reviewed. Periodic monitoring reports, which are available to the public, may also be prepared.[14]

Who does the monitoring?

Resource consent holders may undertake self-monitoring in accordance with conditions on resource consents[15], or retain the services of specialists such as ecologists where appropriate. Councils may use in-house staff or external consultants to assist them with carrying out their consent monitoring functions.

Monitoring costs and bonds

Section 36 of the RMA enables councils to charge applicants for receiving, processing and granting consents, and consent holders for administering, monitoring and supervising consents. Monitoring costs can be paid in entirety by the consent holder, the council, or can be shared. Consent holders can sometimes reduce the frequency and therefore the costs of consent monitoring if they consistently demonstrate compliance with consent conditions.

A financial bond is a way of securing compliance with certain consent conditions (e.g., the completion of landscaping or site remediation). Bonds are provided for under section 108A of the RMA and are generally collected in the form of cash or a bank guarantee at the time of consent granting. When the consent authority notes or the consent holder provides evidence to demonstrate that the relevant conditions have been met, the bond can then be released. In situations where conditions are not met, and the applicant is unwilling or unable to rectify the situation, the consent authority is able to uplift the bond to give effect to the required works specified in the condition. Bonds may also establish long-term growth funds to finance the remediation of effects which may potentially occur after the consent has expired.

Reporting

Results obtained from consent monitoring are ideally interpreted and reported on as a condition of consent by a suitably qualified and experienced person on a specified date(s). This reporting is intended to:

- assess compliance; and
- provide formal and informal feedback to council staff (e.g. compliance officers and planners).

Where monitoring and reporting information is publicly available, it can also be important to other interested parties. Monitoring information can also contribute to formal state of the environment reporting and processes to assess policy and plan effectiveness reporting.

In terms of monitoring compliance with consent conditions, councils will often employ a framework to assess the degree of compliance. For example, Wellington Regional Council uses the following framework[16]:

- **Fully complying:** 100% compliance with all consent conditions at all times during the year.

[14] Taranaki Regional Council http://www.trc.govt.nz/compliance-monitoring/

[15] This is a reasonably common occurrence and its appropriateness depends on the situation. On one hand it alleviates monitoring pressure for the agency and enables consistent holders to have a tangible role in tracking progress and there are instances where it is done well. Conversely self-monitoring may be poorly conducted, and misrepresent compliance or environmental effects.

[16] http://www.gw.govt.nz/Annual-compliance-ratings/

- **Mainly complying:** Compliance with all conditions relating to environmental effects during the year. However, there is minor non-compliance with administrative-type conditions, e.g., late (but by no more than one month) submission of management reports. All administrative conditions are met by the end of the year.
- **Partially complying:** Compliance with all conditions relating to environmental effects during the year. However, there is minor non-compliance with administrative-type conditions, e.g., late (but by no more than one month) submission of management reports. The consent holder needed prompting by Greater Wellington before such administrative conditions are met by the end of the year.
- **Non-complying:** Non-compliance with condition(s) relating to environmental effects during the financial year (this includes any confirmed complaints) and/or not all administrative conditions met by the end of the financial year.

Enforcement

The RMA provides for enforcement action to be taken against consent holders who breach their consent conditions. A consent authority having identified a breach of resource consent conditions has a range of enforcement options available. Enforcement options include written warnings, infringement notices (fines), abatement notices and court action, such as prosecutions or enforcement orders. The consent authority has the discretion to judge the appropriate course of action and will generally establish formal enforcement decision processes and delegations, including seeking legal advice. Under the RMA, any other person or party can also initiate enforcement action by making application to the Environment Court for an Enforcement Order. This could be an important right that may be exercised by concerned persons or parties with interest in seeing effective biodiversity outcomes, for example environmental groups.

Review of consent conditions

Section 128 provides for consent authorities to review consent conditions. Generally, provision needs to be made in consents themselves for reviews to be triggered. However, monitoring may reveal inaccuracies in the information provided at time of the application for consent, providing grounds for review of the conditions.

2.3 Evaluations of consent monitoring systems

As indicated previously, the statutory powers required by councils to develop and implement consent monitoring are available under the RMA. Based on our own experiences and that of former colleagues, there is anecdotal evidence suggesting a number of fundamental issues with the consent monitoring process, particularly with respect to implementation. The key studies so far that have assessed the degree to which these powers are utilised, implemented, or enforced are presented below.

Parliamentary Commissioner for the Environment (1996)

A study by the Parliamentary Commissioner for the Environment (PCE, 1996)[17] investigated consent monitoring systems of three Councils, namely, the Manawatu-Wanganui Regional Council, Tasman District Council (a Unitary Authority), and Wellington City Council. Although undertaken several years ago, this study aligns with contemporary viewpoints about the status of consent monitoring across councils. In summary, councils often approach consent monitoring in markedly different ways depending on:

[17] Parliamentary Commissioner for the Environment. 1996. Administration of Compliance with Resource Consents: report of an investigation of three councils

- the council's functions (i.e., whether the council is a territorial, unitary, or regional council);
- the council's policies on monitoring in general and on consent monitoring and enforcement in particular;
- the structure of the council and the resources available to carry out consent monitoring and enforcement;
- the number and type of consents and the nature of the condition(s) that require monitoring;
- consent monitoring roles and responsibilities, most notably whether the monitoring is conducted by the council or by the consent holder (and audited by the council); and
- the priority given to monitoring compliance with resource consents relative to other RMA functions of the council (e.g., processing consents and preparing policies or plans).

Ministry for the Environment Survey (MfE, 2007/2008)[18]

Every two years local authorities are required to provide information to the Ministry for the Environment (MfE) on key aspects of the RMA process. The survey provides information regarding RMA implementation, and enables performance comparisons across and between local government agencies. The most recent survey by MfE undertaken was the 2007/2008 year with the next report covering 2010/2011, which was unavailable to us at the time of writing this report.

The 2007/2008 report showed that approximately 52,000 resource consent applications were processed through to a decision. The survey identified the consents that 'needed monitoring[19], and reflected that 79% of these were monitored, compared to 59% in 2005/2006. Of the monitored consents, 84% were compliant with their conditions[20]. This was the highest compliance rate over the nine years prior to that study.

The survey showed that complaints about alleged breaches of the RMA continue to increase, with 47% more complaints received in 2007/2008 than in the last survey. There was also an increasing trend for complaints and breaches to be resolved through formal methods such as infringement notices, abatement notices, and prosecution, with an associated drop in resolution by informal methods such as consultation and verbal warnings.

While the MfE survey does provide some useful information on consent monitoring, complaints, and enforcement trends, the data is too high-level to provide a comprehensive overview of resource consent monitoring and compliance. This is particularly true for biodiversity related consent conditions, which can require long term monitoring to assess levels of compliance and to determine if consent conditions for a particular activity are meeting intended environmental objectives or outcomes.

Preliminary findings from Marie Brown's Ph.D. research

Recent, as yet unpublished, research by Marie Brown[21] focussed on assessing the use of ecological compensation[22] in New Zealand to date. The research is in progress, and complements the

[18] Ministry for the Environment. 2009. *Resource Management Act: Two-yearly Survey of Local Authorities 2007/2008*. Wellington: Ministry for the Environment.

[19] A resource consent is defined, for the purposes of that study, as requiring monitoring if it was written in the resource consent conditions that it shall be monitored during the period 1 July 2007 to 30 June2008.

[20] A large majority of consents are consents for tree removal

[21] Research in partial fulfilment of a Doctor of Philosophy Degree at the Centre for Biodiversity & Ecology Research, University of Waikato, Hamilton, NZ.

[22] Compensation as defined by Ms Brown includes biodiversity offsets but also includes other forms of mitigation or compensation activities

previously mentioned assessments. It focuses on the degree to which applicants are complying with consent conditions relating to biodiversity mitigation requirements, and the effectiveness of consent conditions at achieving stated or intended biodiversity objectives (i.e. if the consent conditions are ineffective, being compliant does not result in the positive outcome for biodiversity, as was perhaps envisioned by regulatory authorities.

The research comprised a field-based survey across New Zealand, visiting or interviewing staff at more than 40 Councils, and detailed examinations of over 100 resource consents that contained requirements for mitigation actions. The research has separated mitigation requirement conditions into a wide range of types and will assess the variability in compliance across them.

Whilst the full dataset is yet to be analysed, preliminary findings identify some trends and constraints in regard to mitigation/offsetting for biodiversity, these include:

- considerable variation in consent compliance and consent condition effectiveness, with particularly low levels of compliance and effectiveness in some business sectors and geographic locations;
- variability in compliance across types of conditions, e.g. immediate and one-off conditions are more likely to be complied with than long term monitoring or works;
- information management underpinning consent monitoring is often poor; and
- institutional culture and indeed the attitudes of individuals influence the nature and rigour of the consent monitoring process as it relates to biodiversity values (i.e. individual planners, consultants, applicants, ecologists have often highly disparate regard for all or certain biodiversity values and this contributes to a lack of consistency in the application and implementation of consent monitoring and compliance).

Specific examples illustrate the variation in degree of compliance with consent conditions. Examples where compliance was strong or where requirements were exceeded are described below.

- **Example 1**: Consent conditions for a coastal subdivision that was managed as a working farm and included the restoration of a large wetland, several new forest and wetland covenants and several stages of indigenous planting. The lots are only beginning to be sold and built upon but the ecological restoration of the degraded coastal estate has progressed significantly, and is home to a thriving population of kiwi, in part due to a no cats and dogs policy in the residents' rules.
- **Example 2**: Consent renewal requirement at an existing hydropower facility resulted in the establishment of a conservation programme to facilitate the recovery of a nearby population of the Nationally Endangered whio or blue duck (*Hymenolaimus malacorhynchos)*. In exchange for existing and continuing adverse effects on a small population of whio, a mitigation trust now coordinates a large-scale pest control programme that has significantly increased the survivorship of adults and juveniles and has so far increased the number of breeding pairs by an order of magnitude.

There are also examples where compliance was weak or conditions were not implemented.

- **Example 3**: A multi-lot subdivision that was provided for in a peri-urban area with requirements for the legal protection of extant forest habitat and the creation of new habitat through revegetation. At the time of visiting, the existing habitat had been cleared, but much of the new planting had not been carried out or in some cases had died due to a lack of maintenance.
- **Example 4**: A local authority was required to undertake riparian restoration in a local reserve in exchange for water extraction rights for the town supply. The riparian restoration was carried out to a poor standard and the newly planted site was not added to the

maintenance schedule. A great majority of the plants are now dead and no resources are available to replace them.

In instances where non compliance was identified, no enforcement action had been pursued in either case. The variability in compliance with consent conditions is further exacerbated by a lack of formal decision-making frameworks and articulation of the role of ecological compensation in an RMA context. The impact of this is largely upon the ecosystems in the jurisdiction (in a positive or negative way) and on applicants who have little certainty about what is expected when entering into a consent process.

Notwithstanding the above, some of the best outcomes noted were a product of a genuinely committed landowner, a council appropriately resourced to guide an effective consent monitoring process with respect to biodiversity and a genuinely robust proposal – quite independent of a nascent or indeed non-existent policy context.

2.4 Issues, constraints, and impediments

Generally, the mechanisms, methods, and powers that enable effective consent monitoring and compliance are provided for in the RMA (Section 2.2 of this report). However, as indicated in Section 2.3 they are not fully used by councils, for a range of reasons. Consequently, there are a number of issues that compromise the effectiveness and efficiencies of the consent monitoring process. These issues include the following items, which are discussed further in the remainder of this section:

- consent monitoring often being afforded a low priority;
- inadequate resourcing of consent monitoring functions (i.e. staffing, resources, legal expertise);
- absence of national guidelines, standards, or training;
- appropriate technical expertise is often unavailable;
- poor ecological context and understanding due to a lack of information;
- database and information management, and reporting is inadequate;
- the need for flexibility;
- the need for scalability to manage cumulative effects; and
- enforcement inconsistencies.

Consent monitoring is a low priority

It is important to have community, corporate and council support for consent monitoring, to ensure it is resourced adequately and is used effectively for management purposes. Councils are permitted to charge for actual and reasonable costs incurred while undertaking consent-related monitoring, as provided for by s36(1)C of the RMA. Despite the opportunities for cost recovery, many practitioners have noted that lack of support from peers, managers and councillors has inhibited their monitoring efforts, including following up non-compliance with enforcement measures.

In part, consent monitoring may be afforded a relatively low priority as it is considered to be a negative interface with the consent holder and can create tensions between regulatory agencies and their communities. This is problematic because consenting monitoring (coupled with SOE monitoring) can facilitate improvements in the effectiveness and efficiencies of environmental management through the provision of evidence based policy and operational management initiatives (e.g., mitigation options). In this way, monitoring can also determine the degree to which a council is contributing to national, regional, or local biodiversity objectives.

Inadequate resourcing

Effective consent monitoring and compliance requires adequate resource in order to determine the efficacy of council regulatory and non-regulatory policies. However, councils are often reluctant to charge or to charge fully for consent processing and subsequent administration as described above. As a result, many council consent monitoring functions are simply not undertaken, or fail to meet their intended objectives. A lack of resources may refer to insufficient staff numbers, insufficient resourcing such as vehicle provision for fieldwork and the ability to engage specialist expertise (such as ecologists or legal counsel) when required. Moreover, while a lack of monitoring typically obscures failures, it also acts to obscure gains and successes, such that positive reinforcement of effective processes is less likely to occur for an applicant, or be recognised and recorded by council.

Absence of national guidelines, standards, or training

There is a lack of formal guidelines, standards, and training provided for the purposes of improving the quality and consistency of consent processes as they pertain to biodiversity[23]. This reflects a number of factors including:

- a lack of strategic direction at national and regional levels;
- difficulty in acquiring resources for monitoring;
- technical complexities associated with monitoring biodiversity; and
- considerable variation between councils in terms of:
  - the nature and amount of indigenous biodiversity remaining;
  - the type and magnitude of development pressures;
  - council staff experience and expertise; and
  - financial resources and stakeholder attitudes.

Nevertheless, the absence of national guidelines, standards, or training has contributed significantly to the cross-council variation in the capacity, resourcing, and expertise involved in the consent monitoring process and is likely to have significantly hampered the implementation of consent monitoring requirements.

An example of where a professional standard has been produced and used as informal council policy is in the case of stream impact and offset evaluations at Auckland Council. The Stream Ecological Valuation (SEV) method is increasingly used as best practice guidance[24] even though it does not form part of mandated policy by Council as a mitigation tool. The SEV provides guidance on conducting an assessment of streams and determining an Environmental Compensation Ratio (ECR) method to offset adverse ecological effects[25]. In the case of SEV, the standardised monitoring tool is actively promoted by Council staff, who also provide training programmes for consultants to assist them in effectively applying the method. Standardised conditions of consent around the use of SEV as an impact assessment and ongoing monitoring tool are supported by technical officers whose specific role is to evaluate applications using this method and ensure that monitoring and compliance is achieved once consents are approved.

[23] The Quality Planning Website provides guidance around the general consent monitoring process but does not focus on biodiversity related matters.

[24] Auckland Council 2008: Stream Ecological Valuation (SEV): Method for Scoring the Ecological Performance of Auckland Streams and Quantifying Mitigation. Auckland Council: Technical Publication 302.

[25] The SEV in its current form doesn't adequately or specifically address biodiversity offsetting but the technical document is subject to a regular review process and better incorporation of biodiversity is being considered through the review process, which is underway at the time of writing

Appropriate technical expertise is often unavailable

Very often consent conditions and monitoring requirements are developed or implemented by staff and consultants who lack relevant experience or training. This is often attributed to poor financial or staff resourcing, e.g.:

- appropriately experienced staff are present but unavailable or under-utilised (e.g., planners may require technical input on biodiversity matters but fail to consult ecological experts and/or disregard their advice);
- appropriately experienced in-house staff are absent; or
- the cost of appropriately experienced consultants is deemed to be prohibitive (coupled with a resistance to recover costs from the consent applicant).

The degree to which this is an issue varies markedly across councils. At one extreme, Auckland Council has several teams of ecologists (many of whom have considerable ecological assessment and consenting experience) that are charged with providing input into resource consents and plan changes. On the other hand, most smaller councils do not have in-house ecological expertise and may rely on planning or consent processing staff to assess a consent application for potential adverse effects on biodiversity. Moreover, there is often a high turn-over rate for consents and compliance processing staff in councils. This makes retaining relevantly experienced staff a challenge, especially for the monitoring of larger and ongoing consents. While ecological consultants often have input into an AEE in support of an application, lack of relevant expertise in council may mean that inconsistencies, omissions, or errors in the AEEs or Ecological Management Plans are not picked up, often to the detriment of the site's biodiversity values, i.e. an imbalance between an applicant's and the council's technical expertise, which is predicted by Walker *et al.* (2009) to result in 'an administrative playing field of biodiversity barter tilted towards development'.

Poor ecological context and understanding

The availability of existing information to council staff when dealing with applications typically does not provide a good framework for understanding biodiversity, especially the complexity of connections and inter-relationships between sites, areas and types. Feedback loops (from the results of monitoring consents, compliance and complaints) and their relationship to plan effectiveness and state of the environment monitoring are often absent. These issues are likely to lead to errors or unintentional underplaying of risk to values when assessing the potential impact of further developments.

Due to a general paucity of regional or national biodiversity monitoring programmes, it can be very difficult to assess the relative importance of biodiversity values at a site. For example, monitoring of indigenous bird species at a site might reveal that indigenous bird species richness averages 3.7 species per 5 minute bird count. However, it can be difficult to assess the true value of that site for indigenous birds in the absence of a large scale monitoring programme that provides context, or alternatively, where a larger scale monitoring programme exists but results are incomparable.

In addition, while it may be possible to quantify biodiversity impacts associated with direct habitat loss, it is very difficult to accurately assess indirect, long-term, and cumulative impacts associated with various forms of habitat degradation. For example, the ability to quantify the effects of sedimentation on stream biodiversity, or habitat fragmentation on metapopulation persistence (i.e., local extinction/colonisation dynamics), or the impacts of edge effects associated with biodiversity.

Database and information management, and reporting is often inadequate

Information management and reporting appears to be a serious constraint on effective consent monitoring, particularly where consents have been in place for a number of years. High staff turnover in local government that has been identified elsewhere in this report diminishes institutional knowledge. Institutional knowledge can help to maintain adequate levels of monitoring even when systems to manage relevant documentation are not optimal (such as by being poorly organised, not catalogued or paper-based). The management of mitigation requirements in particular relies upon good information management, and observations from the field by the author notes significant room for improvement in most, but not all agencies visited. Poor information management is often a key contributor to ineffective monitoring and a lack of feedback mechanisms to continually review outcomes and influence subsequent decision-making.

The need for flexibility

Large-scale projects often require refinement of design and construction concepts once the consent for the development is granted. A challenge with such applications is to provide for flexibility in design and construction whilst appropriately managing and mitigating effects. Consent conditions may be ineffective or even *ultra vires* in situations where the specific nature of adverse effects is not determined at the time of granting. It has become relatively common in these situations to either provide for management plans or some technical material to be approved by a Council representative after consent has been granted. However, caution is required to ensure that consent conditions address the type and scale of mitigation requirements so as to ensure that biodiversity is not compromised through modifications associated with the development of ecological management plans. Conditions which secure management plans must instead provide clear performance or environmental standards that are to be certified by an appropriately qualified and experienced person as being achieved.

The need for scalability to manage cumulative effects

Much of New Zealand's biodiversity is lost through "death by a thousand cuts". This refers to the concept of cumulative effects, whereby the 'minor' or "less than minor" ecological effects of many small projects aggregate to result in significant effects on landscapes, habitats and ecological processes over time. Projects with minor effects include those that are unconsented (i.e. permitted or unlawful) and those that are consented but do not require any form of mitigation. For example, 2.7% of the former North Shore City Council's Significant Natural Areas(SNAs) were lost between 2001 and 2006, with a large proportion of these being consented activities for which effects on the SNAs were not mitigated (Auckland Regional Council, 2010).

Consent monitoring can be a rigorous process for consents which are deemed to have significant adverse ecological effects, but it is important to note that the effects in aggregate of many smaller activities may have equal or greater impact on biodiversity. While cumulative effects are supposed to be considered and addressed through the resource consent application process, consent applications are typically not required to demonstrate the avoidance, remediation, or mitigation of less than minor or minor effects. Worse still, in a number of instances where mitigation is required, it is not often carried out, let alone enforced (see section 2.3). This may result in chronic negative effects on biodiversity as each project contributes to some small degree to an overall loss that is essentially uncontrolled.

Enforcement inconsistencies

Assessments to date suggest inconsistencies in enforcement under the RMA, particularly between agencies and even within them. A lack of legal resources (both in-house expertise and funding to engage appropriate counsel) is very likely to generate inconsistency in enforcement as officers

attempt to 'make examples' of certain striking cases, in the hope that it will discourage breaches of consent by others. The consistency and rigour applied to enforcement is likely to influence the likelihood of consent holders opting to or inadvertently breaching their consent conditions.

2.5 Implications

Collectively, the issues discussed above have a number of implications for how well the consent process under the RMA caters for avoiding or mitigating adverse effects on biodiversity and the ability to achieve better biodiversity outcomes. While there are examples of systems working well, the implications are that there are a number of issues or areas for improvement, which are predominantly attributed to the low priority and poor resourcing afforded to consent monitoring, including:

- poor understanding in relation to:
  - the effectiveness of the consent monitoring process;
  - the impacts of various activities on the environment; and
  - the relative importance of cumulative impacts on the environment;
- omissions and errors in the:
  - review of resource consent applications;
  - drafting of consent conditions, and/or
  - consent monitoring process;
- breaches of consent conditions with significant ecological consequences that are actively or unknowingly disregarded;
- a higher proportion of applicants breaching consent conditions on the knowledge that non-compliance is infrequently enforced;
- failure to identify and reinforce good practice and/or approaches that generate better environmental outcomes;
- failure to identify and give due credit to applicants with strong-compliance records through recognition and/or performance based lowering of compliance requirements; and
- applicants who operate across councils are subject to inconsistencies and may lead to increased costs, time delays, or a reduction in the availability of resources that could otherwise be allocated to environmental mitigation initiatives.

Collectively, the implications stated above indicate that:

- councils often fail to meet their statutory requirements and environmental objectives;
- applicants, particularly those that operate across councils will be subject to inconsistencies and inefficiencies through the consent monitoring process;
- biodiversity and associated ecosystem services will continue to decline; and
- even where improved tools are developed to address the decline of biodiversity, e.g. offsetting, the impediments listed above generally mean that they may not achieve improved biodiversity outcomes on the ground.

The issues and implications discussed in Section 2.3 and 2.4 respectively, relate to consent monitoring as it currently occurs under the RMA. Section 3 goes on to discuss biodiversity offsetting in the RMA policy framework before investigating options and solutions for effective monitoring and compliance under a biodiversity offsets mandate.

3 Biodiversity Offsets: monitoring and compliance under the RMA

3.1 Introduction

The described issues, constraints, and impediments to an effective consent monitoring process under the RMA reflect existing international and national concerns with monitoring and compliance under a biodiversity offsetting framework (see Walker *et al.* 2009[4] and references therein). However, in the case of the RMA (unlike policy frameworks in many other countries), mechanisms to ensure an effective and efficient monitoring and compliance process are in place, but are inadequately adhered to or enforced in many instances. Nevertheless, the current RMA policy framework does not adequately provide for offsetting by way of regional and district plan rules and resource consent conditions, which in turn impacts on effective monitoring and compliance for biodiversity offsets. As such, while direct changes to the RMA may not be necessary, to achieve intended biodiversity offsetting outcomes in an RMA policy framework, some changes to the existing framework and better implementation of existing regulatory systems are required.

The purpose of this section is to:

- briefly discuss needs and options for integrating biodiversity offsetting and BBOP biodiversity offsetting principles into RMA policy framework and processes (Section 3.2);
- highlight the potential of biodiversity offsets to justify and drive the need for improved resource consent and specifically monitoring and compliance systems (Section 3.3); and
- identify options and solutions to improving the RMA resource consent process for biodiversity offsetting (Section 3.4).

3.2 Biodiversity offsetting and the RMA

Biodiversity offsetting under the RMA: status quo

At present, the regulatory context for biodiversity offsets in New Zealand has not been formally clarified and is not part of approved or operative RMA documents or processes. The concept and definition of biodiversity offsetting is currently being debated on a case-by-case basis, for example the Board of Inquiry considering the Transmission Gully Plan Change[26,27]

The concept, definition, and principles developed by BBOP have been introduced in the Proposed National Policy Statement on Indigenous Biodiversity (NPS-B)[28]. However the NPS-B holds limited weight in the consideration of applications for resource consents. Section 104 (1)(b) requires the consent authority to have regard to National Policy Statements, but not proposed National Policy Statements. The NPS-B could, however, could be considered under Section 104(1)(c) as a "matter the consent authority considers relevant and reasonably necessary to determine the application".

Despite the absence of a definition, environmental compensation / biodiversity offset type activities sometimes occur under the RMA following the identification of adverse effects and the implementation of appropriate mitigation options through the resource consent process[29]. However, with the exception of a few BOP pilot projects, approaches to date have been *ad hoc* in

[26] Tonkin and Taylor. Draft Barriers to No Net Loss Biodiversity Offsets: Review of Department of Conservation Processes for the Department of Conservation
[27] Milne, P. Transmission Gully Plan Change: A request for a chance to the Regional Freshwater Plan for the Wellington Region. Supplementary Legal Advice to the Board. The New Zealand Transport Agency. 8 July 2011.
[28] http://www.mfe.govt.nz/publications/biodiversity/indigenous-biodiversity/index.html
[29] As detailed in section 4 of the RMA

that they are not quantifiably assessed, nor do they generally seek a no net loss or net gain biodiversity outcome. Biodiversity offsetting is conducted in such a manner because currently, offsetting is not provided for under the RMA policy framework. Therefore to ensure that there is a trigger and motivation for resource consent applicants to consider biodiversity offsets it is first necessary to integrate offsets into the policy framework and the resource consent process. Specifically, the principles and objectives for biodiversity offsetting might be identified through NPSs, RPSs, district and regional plans and the resource consent process, and its practical delivery managed through ecological or biodiversity management plans.

BBOP Principles

Tools to support the use of biodiversity offsets are being developed now by BBOP, albeit with global application in mind and which therefore may require some modifications to reflect New Zealand's statutory environment. The key tool developed by BBOP includes a set of guiding principles and associated draft criteria and indicators. These principles and the draft criteria and indicators that underlie them are the core of BBOP's work to develop best practice for biodiversity offsets and could form the foundation for a formal standard around biodiversity offsetting. It is important to note that the BBOP tools have been designed principally for projects where Government environmental regulation is weak or non-existent. These tools therefore contain many of the key principles that underlie international Environmental Impact Assessment methods, and which are already reflected in the RMA.

The degree to which BBOP principles are addressed in the RMA policy framework varies considerably, with most principles addressed in part, some addressed in full, and some not addressed at all (Table 1). Further, the key principle that addresses this issue is Principle 8, and relevant criterion and indicators for this principle are also provided in Table 1.

Table 1. BBOP Principles and related provisions under the RMA

BBOP Principles and Relevant Provisions under the RMA	
BBOP Principle	**Relevant provision(s) under the RMA**
Principle 1 No net loss: A biodiversity offset should be designed and implemented to achieve in situ, measurable conservation outcomes that can reasonably be expected to result in no net loss and preferably a net gain of biodiversity.	The concepts of biodiversity offsetting, no net loss (NNL) or net gain are not defined or provided for under the RMA, but are addressed in the Proposed National Policy Statement on Indigenous Biodiversity (NPS-B): Principle 5 and Schedule 2(1). **Principle 5:** "*local authorities must manage the effects of activities through district and relevant regional plans (or be satisfied that the effects are managed by methods outside of district or regional plans) to ensure 'no net loss' of biodiversity of areas of significant indigenous vegetation and significant habitats of indigenous fauna*" **Schedule 2(1):** *"No net loss: A biodiversity offset should be designed and implemented to achieve in situ, measurable conservation outcomes which can reasonably be expected to result in no net loss and preferably a net gain of biodiversity*" Many existing policy documents and plans have objectives and policies to maintain or enhance aspects of biodiversity/natural values. These are likely to be less rigorous than what is intended by BBOP Principle 1, which requires a specific outcome and measurement of its achievement.
Principle 2 Additional conservation outcomes: A biodiversity offset should achieve conservation outcomes above and beyond	The concept of additionality is not specifically referred to in the RMA, but is generally recognised by council officers as a necessary part of how mitigation is developed. It is addressed in the NPS-B under Schedule 2(2): *"Additional conservation outcomes: A biodiversity offset should achieve conservation outcomes above and beyond results that would have occurred if the offset had not*

BBOP Principles and Relevant Provisions under the RMA	
BBOP Principle	**Relevant provision(s) under the RMA**
results that would have occurred if the offset had not taken place. Offset design and implementation should avoid displacing activities harmful to biodiversity in other locations.	*taken place. Offset design and implementation should avoid displacing activities harmful to biodiversity to other locations"*
Principle 3 Adherence to the mitigation hierarchy: a biodiversity offset is a commitment to compensate for significant residual adverse impacts on biodiversity identified after appropriate avoidance, minimisation, and on-site rehabilitation measures have been taken according to the mitigation hierarchy.	Section 5(2) of the RMA includes the concept of avoiding, remedying or mitigating adverse effects on the environment as part of the Act's sustainable management purpose. There is case law and ongoing discussion and legal opinions being expressed about whether, how and when this may or may not be considered to be a hierarchy as opposed to a set of optional approaches. Addressed in the NPS-B: *Principle 5:* *In addition to the inclusion in plans of any other provisions that the plan has or is required to have relating to section 6(c) of the Act, local authorities must manage the effects of activities through district and relevant regional plans (or be satisfied that the effects are managed by methods outside of district or regional plans) to ensure 'no net loss' of biodiversity of areas of significant indigenous vegetation and significant habitats of indigenous fauna by:* *a. avoiding adverse effects* *b. where adverse effects cannot be avoided, ensuring remediation* *c. where adverse effects cannot be remedied, ensuring mitigation* *d. where adverse effects cannot be adequately mitigated, ensuring any residual adverse effects that are more than minor, are offset in accordance with the principles set out in Schedule 2.* Schedule 2(3): *"Adherence to the mitigation hierarchy:* A biodiversity offset is a commitment to compensate for significant residual adverse impacts on biodiversity identified after appropriate avoidance, minimisation and on-site rehabilitation measures have been taken according to the mitigation hierarchy"
Principle 4 Limits to what can be offset: There are situations where residual impacts cannot be fully compensated for by the biodiversity offset because of the irreplaceability of vulnerability of the biodiversity affected.	Addressed in part by the RMA in that the 'maintenance' of indigenous biological diversity is undertaken in the context of ss5 to 8 of the RMA. Maintenance can include protection, enhancement and restoration. Most importantly, section 6(c) of the RMA requires all those exercising functions and powers under the Act to recognise and provide for "*the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna*", including on private land. However, section 6(c) in itself doesn't set a limit. Addressed in the NPS-B: Schedule 2(4): *"Limits to what can be offset:* There are situations where residual effects cannot be fully compensated for by a biodiversity offset because the biodiversity affected is vulnerable or irreplaceable."
Principle 5 Landscape context: A biodiversity offset should be designed and implemented in a landscape context to achieve the expected measurable conservation outcomes taking into account available information on the full range of biological, social, and cultural values of biodiversity	Addressed in part in sections 5-8 of the RMA (which set out the purpose of the Act and matters of importance for consideration under the Act) and in turn in policy statements and plans prepared under the RMA. May be considered through the resource consent process and integrated into Ecological Management Plans (where these are developed) – although the approach is generally ad hoc and the degree to which it is used varies markedly across councils and consents. Addressed in the NPS-B: Schedule 2(5): *"Landscape context: A biodiversity offset should be designed and implemented in a landscape context to achieve the expected measurable conservation outcomes taking*

BBOP Principles and Relevant Provisions under the RMA	
BBOP Principle	**Relevant provision(s) under the RMA**
and supporting an ecosystem approach.	*into account available information on the full range of biological, social and cultural values of biodiversity and supporting an ecosystem approach."*
Principle 6 Stakeholder participation: in areas affected by the development project and by the biodiversity offset, the effective participation of stakeholders should be ensured in decision-making about biodiversity offsets, including their evaluation, selection, design, implementation and monitoring.	Addressed in the RMA at two levels: There are wide rights and opportunities for interested parties to participate in processes to prepare policy statements and plans, which should establish the objectives, policies and rules that will apply to biodiversity offsets. This should include rules about when applications for consents potentially involving offsets should be publicly notified. There are provisions for notifying applications (section 95) for public to make submissions on notified consents (Section 96), for hearings (Sections 100 – 103), and for submitters to appeal decisions (Section 120 and 121)
Principle 7 Equity: A biodiversity offset should be designed and implemented in an equitable manner, which means the sharing among stakeholders of the rights and responsibilities, risks, and rewards associated with a development project and offset in a fair and balanced way, respecting legal and customary arrangements. Special consideration should be given to respecting both internationally and nationally recognised rights of indigenous people and local communities.	As per Principle 6, Principle 7 is addressed in the RMA at two levels: There are wide rights and opportunities for interested parties to participate in processes to prepare policy statements and plans, which should establish the objectives, policies and rules that will apply to biodiversity offsets. This should include rules about when applications for consents potentially involving offsets should be publicly notified. There are provisions for notifying applications for public to make submissions on notified consents, for hearings, and for submitters to appeal decisions. Principle 7 is also addressed with respect to tangata whenua through numerous sections[30] *6(e) 'The relationship of Maori and their culture and traditions with their ancestral land, water, sites, wahi tapu, and other taonga' is a matter of national importance which must be recognised and provided for by decision makers (section 6(e))* *6(g) The protection of recognized customary activities is a matter of national importance which must be recognised and provided for by decision makers (section 6(g))* *7(a) 'Kaitiakitanga' is a matter which decision makers must have particular regard to (section 7(a)). It is defined in section 2 as meaning 'the exercise of guardianship by the tangata whenua of an area in accordance with tikanga Maori in relation to natural and physical resources; and includes the ethic of stewardship'.* *If the Minister for the Environment is considering preparing a national policy statement he or she must seek and consider comments from relevant iwi authorities (section 46(a))* *During the preparation of a proposed policy statement or plan, the local authority is required to consult with 'the tangata whenua of the area who may be so affected, through iwi authorities' and any customary marine title group in the area (First Schedule, clause 3(1)(d)-(e)).* *When preparing a regional policy statement, regional plan or district plan, regional councils and territorial authorities are required to take into account any relevant planning document recognised by an iwi authority and lodged with the council, to the extent that its content has a bearing on resource management issues of the region (sections 61(2A), 66(2A) and 74 (2A)* *In relation to a planning document prepared by a customary marine title group under section 85 of the Marine and Coastal Area (Takutai Moana) Act 2011, the council must*

[30] http://www.rmaguide.org.nz/rma/introduction/tangata.cfm?section=legal

BBOP Principles and Relevant Provisions under the RMA	
BBOP Principle	**Relevant provision(s) under the RMA**
	when preparing or changing a regional policy statement or regional plan recognise and provide for the matters in that document, to the extent that they relate to the relevant customary marine title area and take into account other matters in that document *Where a protected customary right is likely to be adversely affected by a proposed activity, the assessment of effects accompanying the resource consent application must include a description of possible alternative locations or methods (First Schedule, clause 1A)* This principle is also addressed in the Proposed NPS Biodiversity: Policy 7 and Policy 8(c): Policy 7: *To recognise and provide for the role of tangata whenua as kaitiaki, when developing and implementing regional policy statements and regional and district plans local authorities shall provide for:* *a. tangata whenua values and interests to be incorporated in to the management of biodiversity* *b. consultation with tangata whenua regarding the means of protecting and enhancing areas and habitats identified in accordance with Policy 4 that have particular significance to tangata whenua* *c. active involvement of tangata whenua in the protection of cultural values associated with indigenous biological diversity* *d. customary use of indigenous biodiversity according to tikanga.* Policy 8(c) *During the development of biodiversity-related provisions of regional policy statements, district plans and relevant regional plans (including prior to notification), local authorities will consult with, and provide reasonable opportunity for, the input of:* *a. those whose properties would be affected by the proposed plan* *b. the public* *c. tangata whenua.*

BBOP Principles and Relevant Provisions under the RMA	
BBOP Principle	**Relevant provision(s) under the RMA**
Principle 8 Long-term outcomes: the design and implementation of a biodiversity offset should be based on an adaptive management approach, incorporating monitoring and evaluation, with the objective of securing outcomes that last at least as long as the development project's impacts and preferably in perpetuity. Criterion 8-2: Adaptive monitoring and evaluation approaches shall be integrated into the Biodiversity Offset Management Plan to ensure regular feedback and allow management to adapt to changing conditions and achieve conservation outcomes on the ground. Indicator 8-2-1: A risk-monitoring protocol is in place and followed to identify any risks (such as climate change, population pressure, land-use change) that could affect achievement of proposed conservation outcomes. Indicator 8-2-2: Offset conservation outcomes and milestones are independently audited and project responds to audit recommendations in a timely manner. Indicator 8-2-3: Monitoring and evaluation protocols provide regular feedback on implementation progress and results and are used to document, correct, and learn from problems (e.g. adaptive management). Guidelines for assessing and auditing biodiversity offset management plans against BBOP PCI criteria are available (see reference).	Principle 8 is partially addressed in the RMA: There are no formal rules explicitly requiring an ecological management plan (or biodiversity offset management plan) under the RMA. However, Principle 8 is partially addressed under: • Section 108 of the RMA, which allows councils to include conditions on resource consents; and • Section 35(2)(d), which requires every council to monitor resource consents that have effect in its region or district, and to take action in accordance with the RMA to resolve non-compliance matters where this is shown to be necessary. Under these sections in the RMA, an ecological management plan may be required as a condition of consent, particularly for consent applications that are considered likely to have more than minor adverse ecological effects. Conditions of consent may also set out plan requirements, e.g., with respect to objectives, milestones, monitoring and compliance, and reporting. At present, the approach is ad hoc and factors used to determine if a management plan is required varies markedly across councils. that rule requirements and consent conditions could include the risk monitoring protocol, independent auditing, reporting and review stuff in the indicators. Principle 8 is addressed in the proposed NPS Biodiversity Schedule 2(6): *Long-term outcomes: The design and implementation of a biodiversity offset should be based on an adaptive management approach, incorporating monitoring and evaluation, with the objective of securing outcomes that last at least as long as the project's impacts and preferably in perpetuity.*
Principle 9 Transparency: The design and implementation of a biodiversity offset, and communication of its results to the public, should be	Addressed in the RMA at two levels: As per principle 6 and 7, there are wide rights and opportunities for interested parties to participate in processes to prepare policy statements and plans, which should establish the objectives, policies and rules that will apply to biodiversity offsets. This should include rules about when applications for consents potentially involving offsets should be publicly notified.

BBOP Principles and Relevant Provisions under the RMA	
BBOP Principle	**Relevant provision(s) under the RMA**
undertaken in a transparent and timely manner.	There are provisions for notifying applications for public to make submissions on notified consents, for hearings, and for submitters to appeal decisions Addressed in the NPS-B in Schedule 2(7): *"Transparency:* The design and implementation of a biodiversity offset, and communication of its results to the public, should be undertaken in a transparent and timely manner."
Principle 10 Scientific information, and where applicable, traditional knowledge shall be utilised when designing and implementing the offset.	Addressed with respect to tangata whenua through numerous sections as per principle [31]

3.3 Potential for biodiversity offsetting to improve monitoring and compliance

The RMA includes a number of mechanisms to help ensure an effective and efficient resource consent monitoring process (section 2.2) however as discussed (section 2.3) there are a number of issues that have led to imperfect biodiversity outcomes. Offsets could provide the basis and incentive for standardising and improving the existing consent monitoring process under the RMA. Indeed, because offsets require monitoring to quantify and validate predicted trajectories of biodiversity change and no net loss, there is an added emphasis on scientific rigour, accountability, and transparency. Such monitoring will need to confirm compliance with consent conditions, and quantify the effects of adverse and beneficial (offset) activities where no-net-loss is a stated requirement. In doing so it enables adaptive management of the offsetting process in response to deviations from projections and milestones. As such, it is anticipated that offsets could potentially lead to:

- increased accountability, rigour, and transparency in relation to monitoring and compliance;
- decreased legal and financial risk to regulatory authorities and consent applicants through consistency and clarity in approach and process (e.g. the use of accepted guidelines to assess environment effects and avoid, remedy or mitigate (including offset) adverse ecological effects;
- potential for improved relationships between regulatory authorities, resource consent applicants, and communities through the provision of increased certainty of biodiversity outcome and of consent processing outcome;
- better environmental outcomes through accountability and process improvements; and;
- the provision of further incentives for the development or continued improvement of supporting systems (e.g. integrated regional and national SOE monitoring programmes, databases, and reporting systems to provide context);
- the setting of national or regional targets for the protection of indigenous environments and species, where currently none exist; and

[31] http://www.rmaguide.org.nz/rma/introduction/tangata.cfm?section=legal

- the availability of BBOP guideline documents tailored for use in New Zealand's regulatory environment, which can be readily adopted into practice.

3.4 Options and solutions for improving monitoring and compliance

Improving the role of monitoring and compliance for biodiversity offsetting arrangements in New Zealand first requires integration of the BBOP definition, concept, and principles of biodiversity offsets into policy and may be achieved by adoption of the PCI assessor and auditing guidelines as stated in Section 3.2. Furthermore, improving monitoring and compliance processes not only requires compliance with consent conditions but also requires consent conditions to specify and lead to intended biodiversity outcomes, e.g. no net loss. This will not be achieved if consent conditions fail to avoid, minimise, or mitigate for adverse ecological effects, or if consent conditions are not quantifiable, relevant, feasible, and enforceable. As such, options and solutions for improving monitoring and compliance therefore exist throughout plan development and the resource consent process, such as:

- The development of regional policy statements and regional and district plans (objectives, policies, rules, and other methods such as assessment criteria);
- preparation of applications with their supporting AEEs and associated technical reports;
- review of applications by councils (including requests for further information and notification decisions);
- submission, hearing and appeal processes;
- setting of consent conditions;
- design and implementation of Ecological Management Plans / Biodiversity Offset Management Plans;
- monitoring and compliance;
- consent and condition reviews; and
- enforcement.

In addition to the integration and use of BBOP PCIs already described, potential options and solutions to be discussed in the following sections include:

- supporting mechanisms (which are not directly part of the resource consent process but contribute to it);
- use of biodiversity guidelines and tools;
- sector specific biodiversity guidelines;
- strengthening the consent process through establishing formal management systems and achieving certification, e.g., to International Organization for Standardization (ISO) standard for quality management systems, ISO 9001.

Taken together these guidelines and tools are expected to significantly improve the compliance and monitoring process for biodiversity offsetting by:

- providing applicants with increased certainty and understanding both pre and post consent application;
- enabling consultants and contractors to compile AEEs and produce associated technical reports, and management plans in a systematic, rigorous, and transparent manner;
- providing a comprehensive framework for council officers to review these documents and set consent conditions (including monitoring and compliance requirements) that enable councils to meet their statutory requirements, achieve better outcomes for biodiversity; and

- guiding the design and implementation of ecological management plans/ biodiversity offset management plans and better ensure that these plans lead to intended biodiversity outcomes on the ground and are compliant with conditions of consent.

Supporting mechanisms for monitoring and compliance

Supporting mechanisms do not directly contribute to monitoring and compliance through the resource consent process. However, the supporting mechanisms mentioned below can significantly improve the process through the provision of pertinent information. Ultimately, such information leads to better decision-making through the consent process and increases the likelihood of achieving intended biodiversity outcomes. Key support mechanisms discussed below include:

- regional and local biodiversity strategies;
- database and information management, monitoring, and research;
- regional or local threatened species / habitat lists; and
- identification and prioritisation of sites for biodiversity offsetting.

Biodiversity-related strategies

There are a number of important strategies and documents that sit outside the RMA but are important for regional and local biodiversity strategies are important for clarifying and articulating regional or local objectives, intended outcomes, and priorities. Examples of such documents include:

- Conservation Management Strategies (CMSs);
- Conservation Management Plans (CMPs);
- National Park Management Plans (NPMPs);
- Reserve Management Plans (RMPs);
- Regional Pest Management Strategies (RPMSs); and
- various Local and Regional Biodiversity Management Strategies and Plans.

These documents can help provide consistency across statutory and other non-statutory documents, and guidance for operational management initiatives. Such documents could help secure better biodiversity outcomes through the consent process by guiding the allocation of resource and effort to the different types of offsetting. For example, if a regional biodiversity strategy weighted the creation of ecological corridors over weed management of existing forest fragments then this could be used to justify offset design and therefore influence monitoring and compliance related consent conditions.

Database and information management, monitoring and research

Database and information management, along with state of the environment monitoring and research is essential to providing much needed data and context with respect to AEEs and the effectiveness and efficiencies of mitigation initiatives. However, many of these programmes currently suffer from poorly defined objectives, incompatible methodologies, a lack of utility for the consent monitoring process, and across operating systems. Identification of database, research, and monitoring priorities that may be used to support the consent monitoring process, including the monitoring and compliance of biodiversity offsets would add considerable value. In particular it is critical to:

- align consent monitoring (i.e. project or site specific monitoring) and state of the environment monitoring (i.e. regional trend monitoring) to enable cross-project/site comparisons, context, and understanding;
- identify offset implementation research priorities to ultimately decrease the extent and intensity of outcome monitoring requirements as part of conditions of consent;

- for example, research focused on the effects of domestic stock enclosure fencing on biodiversity in a mature kahikatea forest stand may negate the need for outcome monitoring for the same management approach on the same ecosystem type for every consent with the same issue. Such research may improve the functionality of offsetting by decreasing the resources allocated to outcome monitoring (assessment of the effects of an activity on biodiversity) and ultimately reallocating more resource into conservation management and/or higher priority research needs for assessing offsetting outcomes; and
- provide increased accessibility and information sharing between consultants and organisations charged with producing technical reports and compiling AEEs and councils who are charged with managing the consent process. The obvious constraint is where information is sensitive or confidential (e.g., breaches client confidentially or poses risk to biodiversity through poaching).

Regional or local threatened species / habitats lists

There are a number of species that do not currently occur on the nationally threatened species list or habitats that are not considered to be nationally threatened. However, in some ecological districts or regions such species or habitats might be considered locally or regionally threatened. Examples of such species include North Island bellbird, and North Island robin which are locally and regionally uncommon. In recognition of this issue, for example, a regionally threatened plant list was developed for the Auckland Region[32] and Wellington Region[33], and regionally threatened lists for fauna are proposed for the region. However, councils may also refer to the presence of regionally threatened species in biodiversity management plans without reference to assessment criteria [34]. The development of locally and regionally threatened species and habitat classification systems would enable more equal and therefore appropriate weighting of species/habitats across spatial scales, and the identification of habitat types where loss of biodiversity may not be considered by council to be appropriate. Effective mapping or species and habitat and clear classification of these also reduces the risk of unintentionally losing important biodiversity through non-equivalent exchanges.

Identification and prioritisation of sites for biodiversity offsetting

Private consultants and companies would also be expected to play important functions in biodiversity offsetting processes, through for example, compiling the AEE and subsequent identification and evaluation of potential mitigation options, including the location of offset areas. Limitations or inefficiencies may arise if potential offset sites are limited, not identified, or are selected in an ad-hoc manner. To address this issue, it would be advantageous to develop systematic criteria and processes to identify and secure potential offset sites, and prioritise those sites in accordance with regional or local biodiversity objectives or intended outcomes. Such sites, will generally be of high ecological significance or have high restoration potential but be in relatively poor condition and/or threatened by development pressure.

Recent initiatives by Landcare Research and DOC to develop site prioritisation models to help direct in-kind selection of offset sites could assist. At a spatial scale, site-based offsetting effectiveness would benefit enormously from including Systematic Conservation Planning principles which better facilitate objective selection of sites and construction of conservation networks required to deliver set targets for biodiversity persistence over landscape scales.

[32] Stanley R, de Lange P, Cameron, E. 2005. Auckland Regional Threatened and Uncommon Vascular Plants List. *Auckland Botanical Society 60(2) 152-157.*
[33] J.W.D.Sawyer. 2004. Plant Conservation Strategy – Wellington Conservancy (excluding Chatham Islands) 2004 – 2010. Department of Conservation, Wellington Conservancy.
[34] Greater Wellington 2007. East Harbour Regional Park Management Plan.

Biodiversity guidelines and tools

This refers to the development and provision of guidelines and tools for managing biodiversity through the resource consent process (with associated training). Collectively, the purpose of these guidelines and tools is to improve the quality of technical information, planning processes, decision processes, consent conditions, monitoring processes. Guidelines and tools (and associated training) will help consultants and contractors to compile AEE and produce associated technical reports in a systematic, rigorous, and transparent manner and provide a comprehensive framework for council officers to review these documents. In doing so, guidelines and tools will better ensure that councils fulfil their statutory monitoring and compliance requirements, achieve better outcomes for biodiversity, and provide applicants with increased certainty and understanding both pre- and post consent application. Consideration will need to be given as to how and where to position guidelines and tools within (e.g. as policies, objectives or rules) or outside of (e.g., as referenced technical guidelines) policy documents under the RMA. Recommendations are set out below.

Technical and process guidance for the preparation and review of AEEs and associated technical reports

- Guidance for assessing biodiversity values including criteria for the selection of:
  - indicators and biodiversity components;
  - locally or regionally threatened species/habitats; and
  - probability of occurrence - for species that may be present but are difficult to detect (e.g. rare, cryptic, secretive, taxa such as geckos, or some small threatened plants).
- Guidance for assessing the ecological significance of biodiversity values.
- Guidance for assessing residual adverse effects on biodiversity resulting from the proposed development. This includes an assessment of:
  - spatial extent of an impact;
  - intensity of an impact;
  - assessments of indirect and direct effects; and
  - risks of an impact.
- Guidance for developing avoidance, remediation, and mitigation recommendations, which potentially include:
  - a biodiversity offsets feasibility assessment desktop tool to provide a systematic and transparent process to determine if the potential adverse effects from a proposed development are able to be offset. This tool would be based on assessments of:
    - biodiversity values;
    - potential adverse ecological effects;
    - potential offset site availability; and
    - potential offset feasibility
  - a biodiversity offset design desktop tool to assist officers in assessing whether the scope and scale of mitigation proposed by an applicant is sufficient to meet council's policy objectives. Moreover, this tool will assist officers with making decisions around the most appropriate approach to mitigating adverse residual effects if involved at the inception of a development project.

Technical and process guidance for setting consent conditions to:

- help ensure that consent conditions achieve intended outcomes with respect to avoiding, minimising, or mitigate for adverse ecological effects;
- automate or standardise consent condition requirements for impacts that have minor (but more than negligible impacts on biodiversity), e.g. the requirement of a pre-determined

financial contribution that is used for a specific site or project deemed to be of high conservation priority (deals with managing cumulative effects/scalability);
- identify instances where flexibility is required based on spatial or temporal differences in biodiversity, or to reflect cross-council differences in priorities, objectives, or process;
- help ensure that monitoring and compliance is readily quantifiable, relevant, feasible and enforceable;
- identify what will be monitored, how it will be monitored (methodology), who will be responsible for monitoring, and how that information will be used to feedback into management systems;
- identify mechanisms to reduce or increase the frequency of consent monitoring based on demonstrated efforts by the applicant to comply with consent conditions and achieve intended outcomes (i.e. rewarding compliance or managing non-compliance); and
- inform on the use of statutory tools to help ensure compliance with consent conditions (e.g. bonds and consent duration).

Technical and process guidance for the development and implementation of management plans to:

- connect consent condition requirements to operational activities;
- standardise the design, methodologies, analyses, and interpretation of results;
- clarify roles and responsibilities for design and implementation; and
- effectively communicate with regulatory authorities.

Sector specific biodiversity guidelines

For some industry sectors, adverse effects and corresponding mitigation approaches are predictable by their type and consistently feature across similar development proposals (e.g. electricity generators, the mining industry and the New Zealand Land Transport Authority, NZTA). In such instances, sector-specific biodiversity guidance for the AEE process and development and implementation of associated management plans may benefit the way in which biodiversity offsetting is adopted early in the engineering design process and help create a consistent, pro-active response by industry across jurisdictions

Certification of council resource consent process systems

Councils' internal processes for resource consent processing and monitoring could be improved by introducing the disciplines of formal management systems, supported by independent certification. The ISO 9001 standard for quality management systems is a well established model for which independent certification can be obtained. The benefits of formalised management systems include increased transparency, rigor and consistency in processes and resultant outcomes and records. Auckland Council is ISO 9001 compliant for its state of the environment monitoring processes.

BBOP PCI assessment and auditing guidelines

Recently (May 2011) the BBOP produced a draft document entitled "BBOP Principles with Draft Criteria and Indicators, and draft Guidance Notes". The purpose of this document is to assist regulators with the assessment of whether an offset has been designed and implemented to conform with the Principles, Criteria, and Indicators (PCI) developed by BBOP. The stated intention of the document is that *"assessors and auditors will not insist on perfection in satisfying the PCI, but that major failures in any individual Principle or Criterion would disqualify a biodiversity offset from meeting the draft standard."* Assessments can be considered in two stages which include:

- "Validation" of biodiversity offset design, when a Biodiversity Offset Management Plan has been prepared that describes a biodiversity offset which, if satisfactorily implemented, should satisfy the PCI; and
- "Verification*" of biodiversity offset implementation, with periodic assessments over time.*

This document provides a best practice framework for conducting monitoring and evaluation of compliance with BBOP principles for biodiversity offsets and could be adopted in New Zealand (in principle) to aid the monitoring and compliance process. While it may require some modification to ensure consistency with the RMA policy framework, the document provides much needed mechanisms to improve the monitoring and compliance process. Specifically, auditing and assessments proposed by the document focuses on the need for Biodiversity Offset Management Plans to:

- adhere to all BBOP PCIs;
- identify what will be monitored, how will it be monitored (methodology), who will be responsible for monitoring, and how that information will be used to feedback into management systems;
- inform on the use of statutory tools to help ensure compliance with consent conditions (e.g. bonds and consent duration);
- have milestones for all conservation outcomes and associated tracking, monitoring, and feedback loops for validating progress (3rd party verification);
- have detailed design and implementation methodologies for all aspects of the plan (that are linked to consent conditions);
- monitoring protocols that measure both implementation and impact performance, and are conducted to provide opportunities for corrective/adaptive management;
- clear roles and responsibilities for stakeholders;
- financial mechanisms and commitments to ensure successful implementation of offsets;
- a risk register and risk monitoring protocol that outlines and assesses the project risk and is periodically reviewed and updated; and
- Improve enforcement process to best ensure compliance with consent conditions and the achievement of intended biodiversity outcomes.

The role of local or national government in conducting BBOP assessments and auditing depends on the approach[35]. For offsets provided directly by the developer (first party offsets) there will usually be provisions in consent conditions for a government agency to monitor the offset site and initiate a series of compliance procedures if actions are not implemented or targets are not met. Where market mechanisms exist (which are not yet available in New Zealand) the developer is relieved of responsibility for assessment and auditing of the offset when the permitting authority accepts the biodiversity credits (purchased by the developer) as a complying offset. The credit supplier takes on responsibility for monitoring and compliance and consequently, private consultants and companies as independent third-party verifiers would also be expected to play important functions in the offsetting processes. There are a number of practical issues around adopting/implementing such a process that need to be carefully considered, e.g., how to ensure that adequate financial resource, capability, and capacity is provided along with how potential auditors/assessors might be identified, certified, and trained.

[35] BBOP (2011). Principles with Draft Criteria and Indicators, and draft Guidance notes. BBOP, Washington D.C.

4 Conclusions and recommendations.

Inadequate conditions of consent and non-compliance with conditions of consent can lead to significant failure rates for mitigation initiatives, and this pattern is expected to be repeated if biodiversity offsets are adopted by regulators, given the current limitations, failings or constraints faced by agencies and local government. Therefore adequate standards, monitoring and compliance follow-up are critical to the successful design, and implementation of a biodiversity offset. Currently, there are a number of issues with the (consent) monitoring and compliance processes under the RMA, that seemingly parallel existing concerns with monitoring and compliance under a biodiversity offsetting framework. However, mechanisms to ensure good monitoring and compliance process are in place in New Zealand as requirements set by the RMA. As such, the issues, constraints, and impediments to achieving a successful outcome are largely due to under-use of the available statutory processes and tools in practice, which ultimately stems from the low priority and resource afforded to monitoring and compliance.

While the concept, definition, and principles underlying biodiversity offsetting have yet to be clarified or integrated into the RMA policy framework, offsetting does provide the justification and incentive to improve upon the current resource consent process, including compliance and monitoring. This would most notably occur through the increased need for rigour, consistency, accountability, and transparency that is associated with biodiversity offsetting. The key first step is integrating the BBOP definition, concept, and principles into the RMA policy framework via National Policy Statements (NPSs), Regional Policy Statements (RPSs), Regional and District Plans, objectives, policies, rules, and other methods (e.g. assessment criteria).

Thereafter, options and solutions to improve the existing process should focus on the provision of supporting mechanisms that provide much needed information and context, the development of biodiversity guidelines, certification of consent processing systems (e.g. ISO 9001 certification), and the adoption in principle of the BBOP assessor and auditor guidelines.

A key forum for presenting many of these issues and options is the Regional Council Biodiversity Forum and Local Government New Zealand (LGNZ), and where biodiversity offsetting programmes exist or are being contemplated, individual councils and council officers driving such programmes. We consider that DOC has a key role in facilitating discussion, technical advice (where appropriate), and advocacy, given its pivotal role in undertaking biodiversity offset related research and development work at present.

Without investment by councils to address the issues raised in this report, it is likely (based on overseas experience) that biodiversity offsetting may not move beyond being applied voluntarily by parts of industry, and may miss its potential to contribute positively to broader environmental outcomes and to the resource consent process for all stakeholders. As such, it is important that the issues, implications, and recommendations discussed in this report are given due consideration through the future development, integration, and implementation of biodiversity offsetting systems in resource management processes.

Recommendations on the integration of biodiversity offsets into the RMA policy framework, and specific recommendations on mechanisms to improve the monitoring compliance are provided in the following framework table (Table 2), along with associated actions and responsibilities.

Table 2. Framework for improving the monitoring and compliance process in a biodiversity offsets/ no net loss context

Elements	Recommendations	Proposed Actions and Role(s)
Policy setting (development and review) Integration of Biodiversity offsetting and principles into: • Proposed National Policy Statement (Biodiversity) • Regional Policy Statements • Regional Plans • District Plans.	Integration of biodiversity offsetting and BBOP principles into policy so that these become matters that decision-makers on resource consents must consider under section 104 through inclusion in appropriate National Policy Statements that can direct councils to amend plans and policy statements[36]; or through directioning amendments to council plans and Regional Policy Statements.	Present a briefing to Regional Council Biodiversity Forum and Local Government New Zealand (LGNZ) to initiate discussion on options and preferred approaches for integration of offsets into policy and plans. Regional councils are considering biodiversity offsets but require some guidance and direction as the approach to date has been ad-hoc. Continue supporting the integration of biodiversity offsetting and associated BBOP principles into RMA policy framework, and providing technical assistance to councils. Integration of biodiversity offsetting into the policy framework will require plan changes or be incorporated when policy statements or plans come under review. This process will require collaborations between councils with DOC assistance where appropriate.
Provision of supporting information Provision of accurate and relevant biodiversity-related information to support policy setting and consent applications and processing.	Development or review of strategic documents that provide biodiversity-related objectives, intended outcomes, and priorities for a given site area (e.g., regional biodiversity strategies).	TOP DOWN - Prepare briefing paper to Regional Council Biodiversity Forum and Regional Council Chief Executives (via the forum), and Local Government New Zealand (LGNZ), and Ministry for the Environment (MfE) to justify the need for strategic biodiversity-related documents under biodiversity offsetting. BOTTOM UP – Enter discussions with councils who have or are in the process of developing biodiversity strategies that could serve as best practice for other councils and be structured in a way to help with offset design by identifying regional priorities for biodiversity management. Continue advocating for the development and review of strategic biodiversity related documents, and assist councils with technical advice where appropriate. This process will require collaborations between DOC and councils.
Provision of accurate and relevant information for policy setting and consent applications and processing.	Development and improvement of compatible database and information management systems, targeted biodiversity outcome research programmes, and state of the environment research monitoring programmes.	This is currently being undertaken independently by councils and DOC. There are some differences in approach which limit methodological and systems compatibility but reflect differing objectives, priorities, and resource needs. Further work needs to be done to improve compatibility and consistency not only between DOC and councils but also with respect to site-specific monitoring approaches for biodiversity offsetting. This process will require ongoing collaboration and consultation between MfE, DOC (BOP and the Natural Heritage Management System, NHMS), councils, Ministry for Agriculture and Fisheries (MAF), Crown Research Institutes

[36] The Proposed National Policy Statement on Indigenous Biodiversity included a No Net Loss Policy and Biodiversity Offsetting Principles (Policy 5 and Schedule 2). However, under recent amendments, only Final or published National Policy Statements, Regional Policy Statements, and Plans can be matters considered under Section 104

Elements	Recommendations	Proposed Actions and Role(s)
		(CRIs), and universities.
	Develop regional (and ultimately local) threatened species/ecosystem lists.	TOP DOWN – Present a briefing paper to the Regional Council Biodiversity Forum and Regional Council Chief Executives (via the forum), and LGNZ, and MfE to investigate the need for councils to require regional / local threatened species/ecosystem lists as a statutory requirement. BOTTOM UP – Enter discussions with Auckland Council and possibly other councils who are in the process of developing a regional threatened fauna list. Also, enter discussions with the DOC Auckland Conservancy which has published the "Auckland Protection Strategy to assist the Natural Heritage Fund in assessing priorities for legal protection or restoration of indigenous ecosystems in the Auckland Conservancy". This could also be adapted for use in identifying regionally and locally (by ecological district) threatened ecosystems. Continue advocating for the development and/ or review of regional and local threatened species/ecosystem lists, and assist councils with technical advice where appropriate. This process will require coordination and consultation between DOC and councils.
	Identify and prioritise sites for biodiversity offsetting.	Present a briefing paper to DOC and the Regional Council Forum to justify the need for councils and DOC to investigate the identification and prioritising of biodiversity offset sites as a statutory requirement. This process will require consultation with and collaboration between and among DOC, councils and private landowners.
Consent process (technical improvements)	Develop biodiversity-related guidelines and tools (with appropriate training) for the resource consent process for the purpose of improving consistency, rigour, and transparency. General and where applicable sector specific biodiversity guidance and tools	TOP DOWN – Present a briefing paper to the Regional Council Biodiversity Forum and Regional Council Chief Executives (via the forum), LGNZ, and MfE to investigate the need to develop biodiversity guidelines and tools. BOTTOM UP – Enter discussions with councils who are initiating 1) the process of developing guidelines and 2) the development of tools to assess biodiversity loss and gain at a regional or local scale. We are aware that Auckland Council is contemplating the development of a Terrestrial Evaluation Method (analogous to the SEV) with input from national experts. This process will require the DOC BOP, to assist and collaborate with the collective councils.
Consent process (process improvements)	Certification of consent process systems	TOP DOWN – Present a briefing paper to the Regional Council Biodiversity Forum and Regional Council Chief Executives (via the forum), LGNZ, and MfE to investigate the need for councils to gain certification of consent process systems. BOTTOM UP – Consult with Auckland Council who are ISO 9001 certified for State of the Environment Monitoring to assess the qualitative costs-benefits of adopting ISO certified management systems. This process will require DOC BOP, to collaborate with the collective councils and Auckland Council in an attempt to have councils develop more rigorous systems similar to the

Elements	Recommendations	Proposed Actions and Role(s)
		Auckland Council model.
Consent process (monitoring and compliance)	Integrate (in principle) the BBOP guide for assessors and auditors (BBOP 2011).	TOP DOWN - Prepare briefing paper to highlight issues and justify need, and to gain support and endorsement from Regional Council Biodiversity Forum and Regional Council Chief Executives (via the forum), and Local Government New Zealand, and Ministry for the Environment. Advocate for and assist with the development of an assessors and auditors guide based of the BBOP guide that is adapted for the RMA statutory framework and the resource consent process with respect to relevance and emphasis. This process will require collaboration between councils and DOC.