BEFORE THE ENVIRONMENT COURT

Under	the Resource Management Act 1991 ("Act")
In the matter of	appeals under clause 14 of the First Schedule to the Act concerning the Proposed One Plan for the Manawatu-Wanganui Region and the topic of Biological Diversity
between	**FEDERATED FARMERS OF NEW ZEALAND** ENV-2010-WLG-000148
and	**MERIDIAN ENERGY LTD** ENV-2010-WLG-000149
and	**MINISTER OF CONSERVATION** ENV-2010-WLG-000151
and	**PROPERTY RIGHTS IN NEW ZEALAND** ENV-2010-WLG-000152
and	**HORTICULTURE NEW ZEALAND** ENV-2010-WLG-000155
and	**WELLINGTON FISH & GAME COUNCIL** ENV-2010-WLG-000157
and	**MANAWATU-WANGANUI REGIONAL COUNCIL** Respondent

Statement of Evidence in Chief of
SPENCER JOHN CLUBB
on behalf of the Minister of Conservation

Dated: 17 February 2012

Minister of Conservation
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Solicitors acting: Sarah Ongley / Alice Camaivuna

STATEMENT OF EVIDENCE IN CHIEF OF SPENCER JOHN CLUBB

QUALIFICATIONS AND EXPERIENCE

1. My full name is Spencer John Clubb. I am a Senior Policy Analyst at the Department of Conservation.

2. I have a Masters of Science degree with distinction in Wildlife Biology and Conservation. I have over ten years experience as a policy analyst working on natural resource, sustainability and conservation issues including energy policy, fisheries management, biodiversity, marine conservation and terrestrial conservation.

3. I have been providing policy advice to the Department's Biodiversity Offsets Programme since joining the Department in October 2010, including leading the drafting of best practice guidance on the application of biodiversity offsetting in New Zealand.

4. Before joining DOC I worked for seven years at the Ministry of Fisheries, focussing on developing tools, frameworks and guidance on managing the adverse effects of fishing on protected species and marine biodiversity.

5. I confirm that I have read and agree to comply with the Environment Court Code of Conduct for Expert Witnesses (Practice Note 2011).

6. This evidence is within my area of expertise except where I state otherwise. I have not omitted to consider material facts known to me that alter or detract from the opinions that I express.

SCOPE OF EVIDENCE

7. I will be providing evidence on the Principles on Biodiversity Offsets as supported by the international Business and Biodiversity Offsets Programme (BBOP) Advisory Committee. My evidence will cover the following points:

   a) The Business and Biodiversity Offsets Programme;

   b) The BBOP definition of biodiversity offsets;

   c) The BBOP principles for designing biodiversity offsets and verifying their success; and

d) The New Zealand Government's Biodiversity Offsets Programme.

THE BUSINESS AND BIODIVERSITY OFFSETS PROGRAMME (BBOP)

8. BBOP was formed in 2004 and works on a consensus basis. The BBOP website provides the following background information that explains the motivation for setting up the group:

> "Currently the world is witnessing an unprecedented loss of biodiversity in ecosystems around the globe.... A major cause of this loss is the destruction of natural habitats by developments in the agriculture, forestry, oil and gas, mining, transport, and construction sectors, among others... A growing number of companies, governments and NGOs are now aware that biodiversity offsets could achieve more, better and higher priority conservation and livelihood outcomes...[than before]"

9. BBOP is a collaboration of over 50 companies, financial institutions, governments, and civil society organisations. Representatives from these organisations form the BBOP Advisory Group, whose role is to develop, test and implement best practice on biodiversity offsets.

10. New Zealand has a number of representatives on the BBOP Advisory Group including those working in Government (from the Department of Conservation), extractive industries, tourism and development.

11. BBOP's mission is "to provide leadership in the establishment of biodiversity offsets as a widely recognized and applied tool by developing and promoting best practice, based on agreed principles". The BBOP vision is that "offsets are applied worldwide to achieve no net loss and preferably a net gain of biodiversity relative to development impacts".

12. Over the first five years its members completed the first phase of work, demonstrating 'proof of concept' for biodiversity offsetting. This work included the development and dissemination of:

a) A set of best practice principles for biodiversity offset design and implementation;

b) Methodology handbooks for voluntary biodiversity offset design and implementation;

c) A portfolio of pilot projects, described in case studies;

d) Consultations with policy makers and other stakeholder groups in many countries; and

e) A Learning Network of over 1000 individuals and organizations worldwide.

13. Since mid 2009, BBOP has been working on its second phase, including building policy, new case studies, developing more detailed guidelines to underpin the principles, working on training and communication and developing verification and auditing protocols. This phase of work is due for completion in mid 2012. As part of this work, BBOP has recently published a Standard on Biodiversity Offsets, designed to assess adherence to the BBOP Principles.

THE BBOP DEFINITION OF BIODIVERSITY OFFSETS

14. The BBOP definition of offsets is (my bold):

> *"Biodiversity offsets are* ***measurable conservation outcomes*** *resulting from action* ***designed to compensate for significant residual adverse effects*** *arising from project development* ***after appropriate prevention and mitigation measures have been taken****. The goal of biodiversity offsets is to achieve* ***a no net loss or preferably a net gain of biodiversity on the ground*** *with respect to species composition, habitat structure, ecosystem function and people's use and cultural values associated with biodiversity."*

15. BBOP summarises the essence of a biodiversity offset by saying that "they constitute measurable conservation gains, deliberately achieved to balance any significant biodiversity losses that cannot be countered by avoiding or minimising impacts from the start, or restoring the damage done."

16. It should be noted that the word "significant" in the BBOP definition is utilised in the international arena, and does not equate to what may be considered as "significant" under New Zealand's Resource Management Act 1991. The word has not been defined by the BBOP but I understand that its meaning is closer to "significant" in the scientific sense, that is, non-trivial or scientifically relevant.

17. Key elements of this definition, including those areas that I have bolded, are clarified in the BBOP Principles on Biodiversity Offsets (see below).

THE BBOP PRINCIPLES FOR DESIGNING BIODIVERSITY OFFSETS AND VERIFYING THEIR SUCCESS

18. A set of internationally recognized best practice principles for biodiversity offset design and implementation was unanimously agreed in December 2008 by the BBOP Advisory Group. Members of the Advisory Group stated that they hoped that other companies, governments and civil society would also adopt the principles as a sound basis for ensuring high quality biodiversity offsets.

19. The BBOP principles are as follows:

> **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.
>
> **2. *Additional conservation outcomes:*** A biodiversity offset should achieve conservation outcomes above and beyond results that would have occurred if the offset had not taken place. Offset design and implementation should avoid displacing activities harmful to biodiversity to other locations.
>
> **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, minimization and on-site rehabilitation measures have been taken according to the mitigation hierarchy.
>
> ***4. Limits to what can be offset:*** There are situations where residual impacts cannot be fully compensated for by a biodiversity offset because of the irreplaceability or vulnerability of the biodiversity affected.

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 and supporting an ecosystem approach.

6. Stakeholder participation: In areas affected by the 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.

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 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 peoples and local communities.

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 project's impacts and preferably in perpetuity.

9. 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.

10. Science and traditional knowledge: The design and implementation of a biodiversity offset should be a documented process informed by sound science, including an appropriate consideration of traditional knowledge.

20. Some of these principles are particularly at issue in the Minister of Conservation's appeal on the Proposed Horizons One Plan, and I will elaborate on those particular principles below. In doing so, I will refer to the BBOP Biodiversity Offset Design Handbook (the Handbook). Alongside the BBOP definition and principles, this Handbook is one of the main products stemming from the first phases of the BBOP work programme, the purpose of which is to help developers, conservation groups, communities, governments and financial institutions that wish to consider and develop best practice related to biodiversity offsets.

21. The Handbook is referred to by BBOP as "Interim guidance" because although it reflected a consensus around best practice when it was published

in 2008, BBOP acknowledges that biodiversity offsetting is a new and emerging field, and that while the definition and principles are well founded, there is benefit in further refinement, testing and dialogue with the international community on the detailed implementation of the principles. I will, on occasion, refer to work that is in progress to refine thinking in the Handbook, to provide as contemporary a view as possible on emerging international best practice that may be relevant to this hearing.

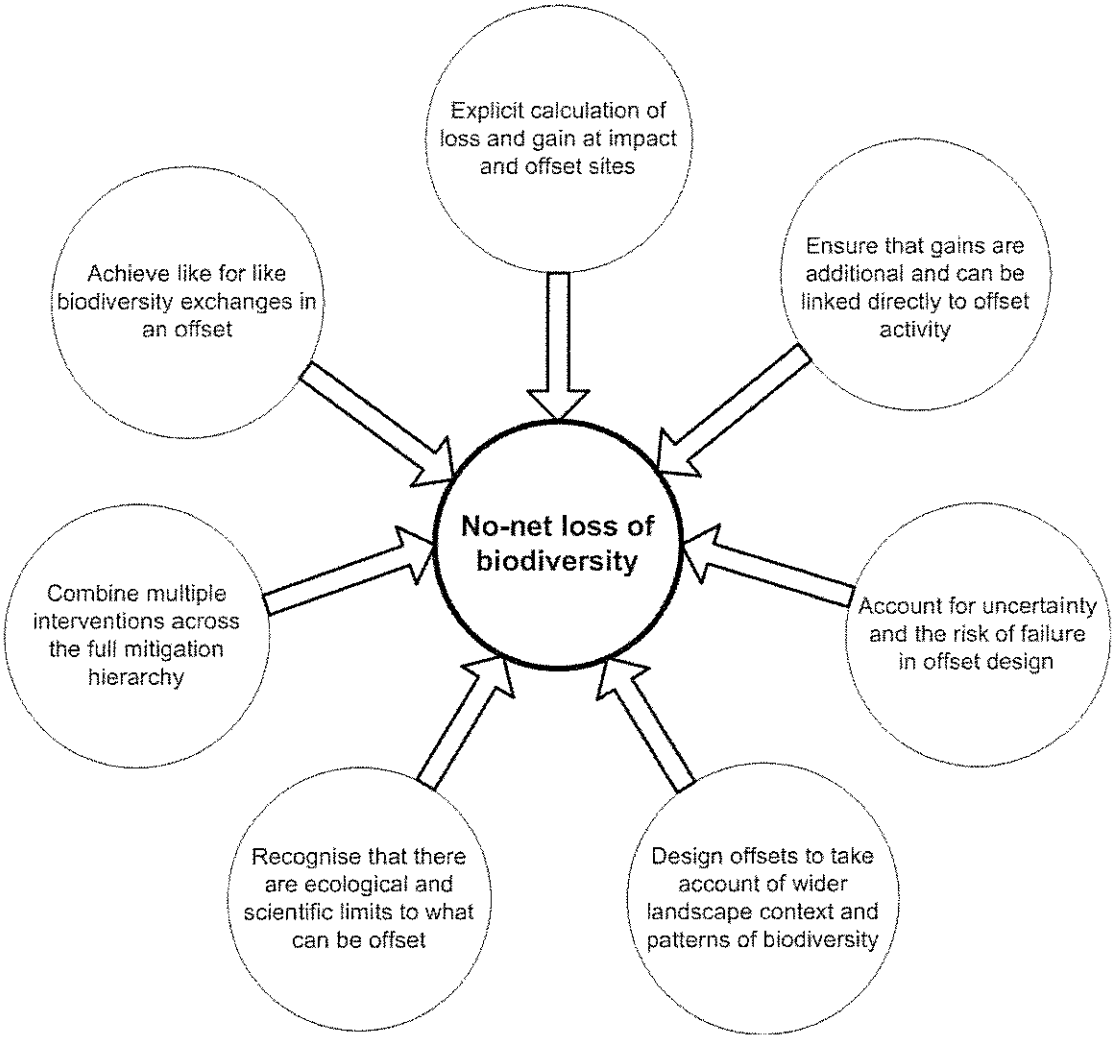
a) ***Principle 1: No net loss***

22. 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.

23. In this context, *in situ* means "on the ground", as opposed to measures that have an indirect benefit to biodiversity, such as capacity building or education initiatives or monetary compensation.

24. A recent BBOP draft resource paper on the concept of no net loss[1] illustrates how at least seven different components of an offset are necessary to demonstrate no net loss. Many of these components also appear as BBOP principles in their own right. The components making up "no net loss" can be seen in the following figure taken from that paper:

[1] BBOP Draft Resource Paper NNL 16-6-2011 CONSULTATION



25. Of particular importance is the fact that biodiversity offsets are based on the explicit calculation of biodiversity losses and gains at matched impact and offset sites. This is what distinguishes offsets from all other types of mitigation/compensation. That is, there must be a form of rigour applied to calculating losses at the impact site and demonstrating equivalent gains at the proposed offset site. I agree with the views of the author of the paper when he states that "it is impossible to demonstrate that gains match or exceed losses without going through this exercise".

26. Without a robust demonstration of no net loss (or net gain) it is very difficult to argue that positive effects taken at an offset site match or outweigh the adverse effects at an impact site. There is a risk that adverse effects will remain and biodiversity values will be lost.

27. Another key component highlighted in the diagram is the use of like for like biodiversity exchanges in an offset.

28. "Like for like", also known as "in kind" exchanges in biodiversity are those where the biodiversity type being lost is the same as the biodiversity type being gained. In contrast, "like for unlike", also known as "out of kind" exchanges are those where the biodiversity type being lost is considered to be different to the biodiversity type being gained.

29. As noted above, biodiversity offsetting differs from other forms of off-site mitigation or compensation in that it explicitly attempts to achieve a stated and *measureable* conservation outcome - that adverse effects on biodiversity will be effectively cancelled out by beneficial effects on biodiversity elsewhere, to ensure as far as possible that there is no overall net loss, and preferably a net gain, in biodiversity.

30. For no net loss to be measurably and robustly demonstrated, it could be argued that biodiversity gains and losses need to be comparable in ecological terms - in other words, that biodiversity offsetting needs to be "like for like".

31. The BBOP draft resource paper on No Net Loss has recognised this principle of "like for like". It states that different components of biodiversity cannot be viewed as substitutes (i.e. traded) for each other when seeking to secure no net loss. However, it notes that the only exception is where development activities can be shown to impact low conservation priority components of biodiversity *and* where areas of high conservation priority can be improved through an offset, such that clear improvements in conservation outcomes are possible (often termed 'trading-up').

32. This issue is also explored, and advice is provided, in the BBOP Biodiversity Offset Design Handbook (the Handbook), which states that:

"The most desirable outcome is generally to offset the biodiversity components to be impacted by targeting the same biodiversity components elsewhere (an 'in kind' ["like for like"] offset). In certain situations, however, the biodiversity to be impacted by the project may be neither a national nor a local priority, and there may be other areas of biodiversity that are a higher priority for conservation and sustainable use and under imminent threat or need of protection or effective management. In these situations, it may be

appropriate to consider an 'out of kind' ["like for unlike"] offset that involves 'trading up'; i.e. where the offset targets biodiversity of higher priority than that affected by the development project."

33. It is my opinion that under most circumstances it is very difficult to robustly measure and demonstrate no net loss when the biodiversity that is being lost is of a different type to the biodiversity that is being gained. I therefore consider that the first BBOP principle of "no net loss" will, in effect, require biodiversity offsetting to be "like for like".

34. I consider that the only exception is where the biodiversity that is being gained is so clearly and unambiguously of greater value than the biodiversity that is being lost, and where the biodiversity that is being lost is not generally under threat, that a "net gain" can be accepted as having been demonstrated to the standard necessary to be considered to be a biodiversity offset.

35. I therefore agree with the policy intent of the principle of no net loss, as expressed in the BBOP Handbook – that it is generally preferable for biodiversity losses and gains to be of the same type.

36. I wish to briefly mention the difference between "no net loss" and "net gain". Under the BBOP framework, no net loss is considered to be the minimum standard required for a biodiversity offset. However, BBOP express a preference for the achievement of a net gain. In reality, it is very difficult to build an offset that exactly achieves no net loss, as this represents a point along a continuum from net loss to net gain. I therefore consider it appropriate (and agree that it is preferable) to design offset proposals to achieve a net gain in biodiversity.

b) ***Principle 2: Additional conservation outcomes***

37. A biodiversity offset should achieve conservation outcomes above and beyond results that would have occurred if the offset had not taken place. This is known as the principle of 'additionality'. Examples of additionality include creating or restoring ecosystems, improving the condition of existing habitats and protecting habitats from immediate or inevitable loss.

38. The BBOP Handbook notes that "it is important to check that the conservation gains planned through the activities at the offset site(s) would not have

happened anyway, in the absence of the offset. By comparing how the biodiversity components are predicted to change under the *status quo* scenario with how they would change under the offset scenario, offset planners can calculate the expected conservation gain".

39. I consider that demonstrating additionality is key to demonstrating no net loss. Conservation actions must be demonstrated to have occurred only because of a development taking place and for the explicit purpose of offsetting the biodiversity impacts of that development.

c) ***Principle 3: Adherence to the mitigation hierarchy***

40. A biodiversity offset is a commitment to compensate for significant residual adverse impacts on biodiversity identified after appropriate avoidance, minimization and on-site rehabilitation measures have been taken according to the mitigation hierarchy.

41. BBOP define the mitigation hierarchy as:

a. Avoidance: measures taken to avoid creating impacts from the outset, such as careful spatial or temporal placement of elements of infrastructure, in order to completely avoid impacts on certain components of biodiversity. This results in a change to a 'business as usual' approach.

b. Minimisation: measures taken to reduce the duration, intensity and / or extent of impacts that cannot be completely avoided, as far as is practically feasible.

c. Rehabilitation / restoration: measures taken to rehabilitate degraded ecosystems or restore cleared ecosystems following exposure to impacts that cannot be completely avoided and / or minimised.

d. Offset: measures taken to compensate for any residual significant, adverse impacts that cannot be avoided, minimised and / or rehabilitated or restored, in order to achieve no net loss or a net gain of biodiversity. Offsets can take the form of positive management interventions such as restoration of degraded habitat, arrested degradation or averted risk, protecting areas where there is imminent or projected loss of biodiversity.

42. It is clear from both the BBOP definition of biodiversity offsets and from Principle 3, that biodiversity offsetting is designed to address residual adverse effects *once all other stages of the mitigation hierarchy, including minimisation (or on-site mitigation) have been implemented*.

43. Offsets differ from minimisation (or on-site mitigation) in that they do not reduce a negative, or adverse effect, at the location where the adverse effect is occurring. Rather, they balance this adverse effect with a positive effect elsewhere. Biodiversity offsetting therefore represents an *exchange* of biodiversity, even when it is like-for-like.

44. To illustrate this point further, offsetting requires the full range of biological diversity to be simplified into measurable units that can realistically be exchanged in the form of a currency, and accounted for to achieve no net loss. However, even the achievement of no net loss cannot guarantee that the *full range* of biodiversity values will not be lost, as only some values are captured by the currency. Because of this simplification, there will always be doubt as to whether biodiversity values that have not been commoditised and exchanged will be lost in the process.

45. It is perhaps for this reason that offsetting is clearly distinguished by the BBOP as being lower down the mitigation hierarchy than minimisation (on-site mitigation). In BBOP terminology, offsetting is referred to as "environmental compensation" and not "mitigation" or "minimisation". However, as with the term "significant", the term "environmental compensation" is utilised in the international arena, and therefore this use of terminology in the international context does not inform us as to whether offsetting should be considered as "mitigation" under New Zealand's Resource Management Act 1991.

46. Regardless of terminology, conceptually, I consider that there is a clear distinction, and a clear hierarchy, that places offsetting as a separate activity, designed to address residual adverse effects only after avoiding, remedying and minimisation has taken place.

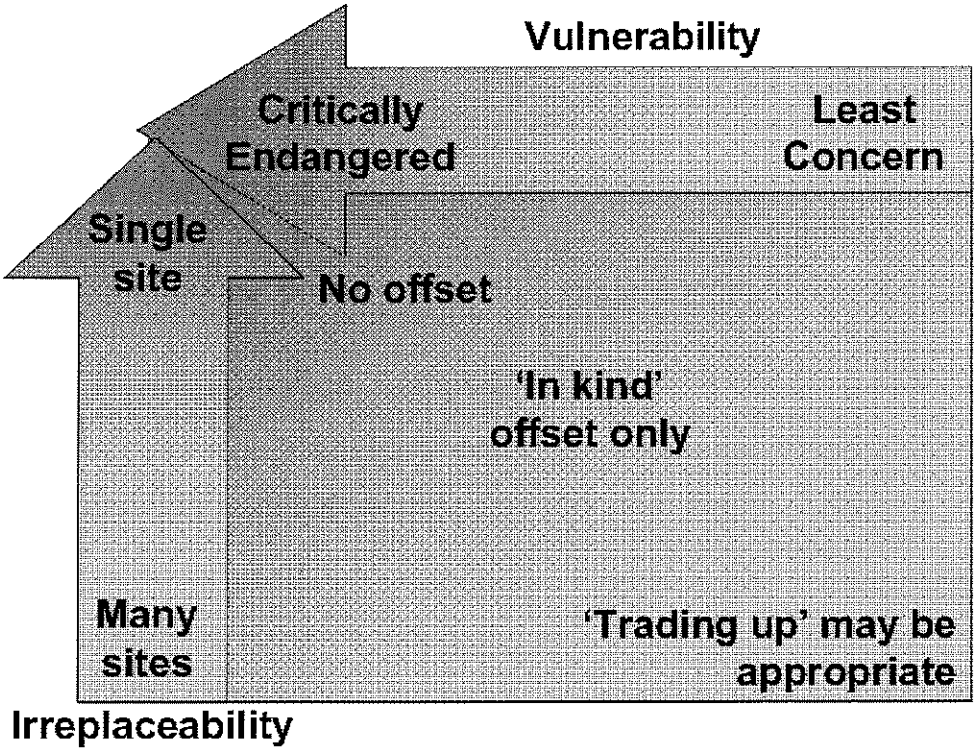
d) ***Principle 4: Limits to what can be offset***

47. There are situations where residual impacts cannot be fully compensated for by a biodiversity offset because of the irreplaceability or vulnerability of the biodiversity affected.

48. "Irreplaceability" is closely linked to the number of places that a particular component of biodiversity exists and can be effectively conserved. Where biodiversity is limited to one or few sites, BBOP consider irreplaceability to be high. Where biodiversity occurs at many sites, irreplaceability is considered to be low. The concept of irreplaceability can be considered at a number of different scales, from individuals or populations, through to habitats and entire ecosystems.

49. "Vulnerability" reflects the likelihood that a component of biodiversity will disappear, become non-viable, or go extinct. According to BBOP, where the likelihood that biodiversity will be lost is low (low vulnerability), alternative options will exist into the longer term. Where the likelihood of loss is much higher (high vulnerability), biodiversity must be protected now or never. BBOP notes that many threat classification systems are based on this concept.

50. To illustrate how irreplaceability and vulnerability/threat might be used to determine an offset threshold, the BBOP Handbook offers the following figure:



51. Additionally, BBOP recognise that regardless of irreplaceability/vulnerability, there are limits to what can be offset because of the need to restore or

reconstruct biodiversity within a reasonably short timeframe. The BBOP Handbook states that:

"Another key consideration is whether an ecosystem or habitat for a key species can be replaced (i.e. restored or re-constructed) within a reasonably short timeframe irrespective of whether an ecosystem/species is rare and threatened or not, for example, bogs or primary forests can not be replaced within a lifetime and these might therefore be considered 'no-offset' ecosystems."

52. Indeed, for many components of biodiversity, there is not sufficient knowledge to achieve a successful offset due to the difficulty or complexity of recreating biodiversity in another place. Thus, limits to offsetting can be considered from a perspective of being inappropriate (due to vulnerability/irreplaceability concerns) or impossible to offset, particularly within a suitable timeframe.

53. Currently there is no consensus around exactly where lines should be drawn when determining limits to offsetting. BBOP recognise that the issue is considerably influenced by societal values and country-specific objectives and information. A resource paper on limits to offsetting has been developed by BBOP and provides a conceptual framework that can be consistently applied, while allowing for actual limits to be tailored to each country. Work is underway to finalise this framework such that it can be applied in a New Zealand context.

e) ***Principle 8: Long-term outcomes***

54. 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.

55. There are a number of important ideas contained within this BBOP principle:

a) biodiversity actions, and the effectiveness of those actions, must be monitored and evaluated *over a long period of time* to ensure that no net loss is achieved and maintained;

b) an adaptive management approach is often necessary to ensure that where conservation actions are not achieving necessary outcomes,

further actions can be taken to ensure that no net loss is achieved; and

c) there must be *sufficient resources and commitment* (especially financial and monitoring/enforcement) to ensure that no net loss conservation outcomes are secured for at least the lifetime of the impact from the project, which in many cases such as a road development, may be in perpetuity.

56. It is clear that securing long-term outcomes requires a long-term commitment from a number of parties in order to achieve the above including both the developer and the regulatory authority. Failure to implement, monitor, fund and where necessary, enforce agreed conservation outcomes risks failure to achieve no net loss of biodiversity.

THE NEW ZEALAND BIODIVERSITY OFFSETS PROGRAMME (NZBOP)

57. The Department of Conservation (DOC) is currently managing a three-year Biodiversity Offsets Research Programme funded by the Government's Cross Departmental Research Pool (CDRP), to investigate the feasibility of biodiversity offsetting in New Zealand.

58. The objectives of the programme are to:

a) Devise objective measures for comparing biodiversity at impact and offset sites

b) Develop a cost-effective mechanism to establish that there has been no
net loss in biodiversity at impact and offset sites

c) Identify places where biodiversity can be restored to achieve a net gain, via a transparent re-creation or enhancement process

d) Define biodiversity trade and exchange equity issues across time, location and ecological similarity

e) Understand the utility of different offset measures by testing their ability to achieve equity across a range of contrasting scenarios

f) Demonstrate how biodiversity offsets can be effectively implemented, through partnering with entities that have volunteered pilot case study projects to develop and test an agreed measurement system

59. The Programme is overseen by a governance group comprising members from five central government departments and is advised on technical matters by an ecologists working group.

60. The results of the research programme will be used to develop best-practice guidance for developers and decision-makers on biodiversity offsetting in New Zealand, consistent with international best practice. The guidance will provide transparent, consistent and practical advice on when and how a biodiversity offset can be considered under New Zealand legislation; and how to develop, implement and monitor a best practice biodiversity offset.

61. The guidance will include:

a) Direction on determining the appropriateness of offsetting for vulnerable and irreplaceable biodiversity

b) How to calculate losses and gains to ensure a No Net Loss offset

c) Practical measures to overcome barriers to successful implementation

62. The research programme is due for completion in mid 2012 and it is hoped that best practice guidance will be available in draft form at about the same time.

CONCLUSION

63. Biodiversity offsetting provides a means by which decisions can be made about proposals for 'exchanging' or compensating for biodiversity loss, after the mitigation hierarchy has been met, in a more robust, transparent and accurate manner than has often been the case in the past.

64. It is my opinion that the definition and principles for biodiversity offsetting as developed by BBOP are appropriate to New Zealand. I do not consider that the term "biodiversity offset", or related terms, should be used for circumstances where the definition and principles do not apply.

65. I also consider that application of all of the BBOP principles is necessary whenever a proposal to create, protect or 'exchange' biodiversity to make up for lost biodiversity is being considered, to ensure that no net loss of biodiversity will be achieved in a lasting and equitable manner. Without the rigour of biodiversity offsetting, there is a risk that losses in biodiversity will occur due to a lack of transparency, understanding, robustness or long-term commitment to achieving no net loss of biodiversity.

66. I have read the suggested amendments to Policy 12.5 in the planning evidence of Helen Marr and, although I am not a planner, I agree with Ms Marr that those amendments properly reflect the BBOP principles.