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

Rebuttal Evidence of

DR PHILIPPE JEAN ROBERT GERBEAUX

on behalf of the Minister of Conservation and Wellington Fish & Game Council

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Dated: 14 March 2012

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REBUTTAL EVIDENCE OF PHILIPPE JEAN ROBERT GERBEAUX

1. My full name is Philippe Jean Robert GERBEAUX. I have prepared evidence on behalf of the Minister of Conservation and the Wellington Fish and Game Council in this matter. In this rebuttal evidence I rebut matters raised in the evidence of Mr Matiu Park and that of Ms Lynette Wharfe.

Evidence of Mr Park

Modified wetlands in the Horizons Region

2. I acknowledge Mr Park's overall support (in his paragraph 3.4) of the general approach taken by the Proposed One Plan to maintaining indigenous biological diversity in the Manawatu-Wanganui Region. However Mr Park discusses instances where the condition or degree of modification of a habitat should influence the assessment of its significance. I disagree with Mr Park that there will be instances where rare and threatened wetland habitat types identified in Schedule E will not constitute significant habitats under section 6(c) of the Act, by virtue of their condition or degree of modification.

3. Mr Park provides examples of swamp and marsh wetland habitats, which are defined as threatened habitats under Schedule E of the One Plan because less than 20% of those wetlands remain in the Region. Mr Park does not consider that all such habitats would meet the criteria for "significance" under section 6(c) because:

   - In relation to coastal dune lakes and wetlands in the Horowhenua District (paragraph 4.8 Park) *"...[w]hile there is no doubt that a number of these wetlands are ecologically significant, a number are so highly modified that Horizons field staff have commented in the Regional Wetland Inventory that although meeting the Schedule E habitat type definitions, a number are considered to be 'extremely low value and extremely*

degraded' (Otawhaki Lagoon), 'fairly low condition, southern units are very degraded by stock' (Kuku Lagoon) and 'relatively low ecological value' (Lake Waitaha)."

In response, the Revised Regional Wetland Inventory and Prioritisation (Lambie 2008) ranks wetlands in the Horizons Region from priorities A (top priority) to D (least priority). My understanding is that the Inventory was prepared for the purposes of assessing sites that could be managed through the allocation of funding, and through 'non-regulatory' support. This is stated in the Inventory as follows:

> *"With the drastic reduction in the extent of wetlands over the last 150 years, it follows that most wetlands in the Region are considered rare or threatened habitats by Horizons ... This inventory lists all of the sites Horizons is aware of that fall under the Proposed One Plan rules. It is likely there are many more wetlands that also fall under the Proposed One Plan rules that have yet to be identified.*
>
> *Regulation and enforcement of rules alone does not protect wetlands from all of the threats. Managing threats like pests and weeds, and solutions like excluding stock are often better addressed through non-regulatory methods of protection.*
>
> *...*
>
> *Not all of the wetlands and wet places listed in the inventory can be given non-regulatory assistance. To do so would stretch Horizons' resources beyond capacity or result in money being wasted. ... The prioritisation helps guide decisions as to which wetlands are managed under the Wetlands Biodiversity Programme."*
>
> (Page 12)
>
> *"It is important to note that the priority band is not a test of significance. ... The priority D sites are still considered significant rare or threatened wetland habitats under the Proposed One Plan"*
>
> (page 17).

Using a criterion that includes 'condition' to prioritise sites for *management* purposes is entirely consistent with what I recommended in paragraph 39 of my primary evidence. I have no doubt that some of the coastal dune lakes mentioned by Mr Park are in a modified state, and some may be described as having 'low value' from an ecological perspective. However the Inventory was not prepared for the purpose of determining which wetlands met the test for 'significance' under the Resource Management Act. The Region has lost a large extent of its original wetlands (with only 2.6% of its wetlands remaining). For this reason *all* remaining wetlands should in my view be regarded as significant under the Act. Considering as significant only those wetlands with high or even moderate values in the Region would exclude a very large number of wetlands and would fail to provide for the ongoing maintenance of the several wetland habitat types identified in the Schedule E and their biodiversity.

- *"There are numerous examples of highly modified wetlands dominated by raupo, a common and often invasive indigenous species in the Region"* (his paragraph 4.7):

  Raupo is a species of Maori value (all parts of the plant – leaves, roots etc - have some traditional usage); it is also an indicator species of permanently wet habitats likely to contain eel and other freshwater species of significance, especially specialist avifauna. Wetlands are major habitats for sustaining bird populations in New Zealand (O'Donnell 2000; Williams 2004). Raupo wetlands often attract specialist swamp birds (like bittern, crakes, rails) as they feed and shelter in dense wetland vegetation for most of the time. These birds can easily be overlooked as they are incredibly cryptic. The absence of bittern, rail and crake records in particular does not mean that the species are absent from an area.

  The increased scale of raupo swamp habitats will in my view help increase the size and long term viability of specialist wetland avifauna

populations. This is particularly important for species such as bittern that have large territory requirements and which might move seasonally to different food sources. Examination of the Department of Conservation's database of confirmed bittern records shows that, for the 584 observations where specific vegetation type was provided, over 200 (34.5%) were in raupo associations. Interestingly, the database also records this nationally endangered[1] bird at two sites classed as priority D in the Regional Wetland Inventory.

4. My comments above are closely related to Mr Park's recommendation to include reference to "functioning ecosystems processes" in Policy 12-6 (the significance criteria), which I now discuss.

Policy 12-6: Significance Criteria

5. Mr Park, in his paragraph 6.2 refers to the criteria proposed by Norton and Ropper-Lindsay (1999, 2004) for assessment of significance under section 6(c) of the Resource Management Act. He states:

"In almost all variations of the significance assessment criteria, representativeness, rarity, distinctiveness/patter and ecological context are used and there is a good understanding by ecologists, planners and the Courts of how these criteria are defined and interpreted."

6. Although the criteria from Norton and Roper-Lindsay (1999) have been widely used, the approach to determining significant natural areas under the RMA - and more especially the Norton-Roper-Lindsay criteria - is still being debated (see for instance Walker et al (2008) and the response from Norton and Roper-Lindsay (2008)). Norton and Roper-Lindsay are the first to concede that these criteria should be reviewed.

[1] The bittern is also classed as globally Endangered by the IUCN ('International Union for Conservation of Nature'). It is present only in New Zealand, New Caledonia and southern Australia.

7. Mr Park in his paragraphs 6.5 and 6.8 makes specific reference to the recent *Friends of Shearer Swamp Incorporated v West Coast Regional Council* ([2010] NZ EnvC 345) interim decision of the Environment Court (the "FOSS" case thereafter). I have myself referred to that case in paragraph 32 of my primary evidence (but with reference to the most recent interim decision from the Environment Court as well as a High Court decision)[2]. As an expert providing evidence to assist the Court in that case, I would like to make some further comments on what Mr Park says.

8. In the first interim decision of the Environment Court in the *FOSS* case, it was accepted by the Court, on the advice of the experts (myself included) that, in relation to the Norton and Roper-Lindsay criteria:

> *"Time has now overtaken the published ecological significance criteria, and this is often the way with progressive refinement and improvement of assessment techniques."*[3]

9. I understand that Ms Hawcroft will outline more specifically how these ecological significance criteria have been 'overtaken' by time, and Ms Maseyk's evidence discusses the processes involved in developing significance criteria for the One Plan. I regard the expert caucusing that took place around the *FOSS* case as an example of the way to move forward, as is recommended by the original authors of the criteria.

10. The *FOSS* case focused essentially on defining *representativeness*. While the case addressed several criteria to assess significance, the other criteria were relatively easily and quickly adopted (with some minor refinements made during caucusing). The other criteria adopted included recognition of significance if a wetland was a "*member of a wetland class that is now less than 30% of its original extent as assessed at the ecological district and the freshwater bio-*

[2] *Friends of Shearer Swamp v West Cost Regional Council*: Environment Court decisions [2010] NZEnvC 345 and [2012] NZEnvC006 and High Court decision CIV-2010-409-002466.

[3] Paragraph 145.

geographic unit scales"[4]. As I explain in my primary evidence, this criteria was placed under 'rarity' rather than 'representativeness', a different approach to the One Plan. Although the One Plan takes a different approach to placing or ordering the criteria, it is consistent with the *FOSS* case because it recognises as significant wetlands classes where there are few remaining from the original extent. Mr Park refers to this concept as 'LENZ rarity'[5]. The One Plan takes an even less precautionary approach to that utilised in the *FOSS* case because the threshold adopted is less than 20% remaining (and not less than 30% remaining). However this was assessed at a regional scale rather than the ecological district/freshwater bio-geographic unit scales, which is also acceptable. I can confirm that all wetland habitats of the Horizons Region would also be less than 20% remaining at the freshwater biogeographic unit scale.

11. There are some wetland classes in the West Coast Region that have *more than* 30% of the original cover remaining (at the ecological district and the freshwater bio-geographic unit scales). So, even though these wetland classes were not 'rare' in the West Coast Region, the case focussed on giving appropriate recognition to these many large wetlands with high levels of natural character which have often been noted as of high value. This was why, as noted in paragraph 6.5 of Mr Park's evidence, the 'representativeness' criteria used in that case referred to wetland types that were in a condition that would have existed prior to circa 1840[6] – a relatively high threshold. The Manawatu-Wanganui region is very different to the West Coast region with very few wetlands remaining (less than 3%), many being small with much lower levels of natural character than the wetlands of the West Coast. Because there are *no* wetland habitats in the Manawatu-Wanganui Region with over 20% remaining, there is no need to undertake this further exercise in this Region. That is, there is no need to further consider whether there are other more common wetland types that are 'representative' in terms of being "*an area of indigenous vegetation that is typical of the habitat type in terms of species composition,*

[4] Refer Appendix 8 attached to the second Interim Decision [2012] NZEnvC006.
[5] Parks EIC paragraph 6.7
[6] Refer footnote 7 of my primary evidence setting out the criteria for 'representativeness' adopted in the *FOSS* decision.

structure and diversity"[7]. For completeness, I believe that 'representativeness' is more concerned with the typical nature of a habitat as accepted in the *FOSS* case, rather than that "*representativeness is concerned more with maintaining ecological processes and patterns in both space and time, than individual species*"[8]. I therefore disagree with Mr Park's statement in paragraph 6.6 of his evidence.

12. Mr Park states in his paragraph 6.7 that relying solely on 'LENZ rarity' for the inclusion of threatened habitats does not take into account the full range of assessment criteria (referring to other factors such as ecological context, condition/ecosystem functioning, size and shape and long-term sustainability). However as was accepted in the *FOSS* case, which I understand is the most recent Environment Court consideration of the issue, the factors should be considered separately. They do not *all* need to be fulfilled in order for a site or habitat to be assessed as 'significant'.

13. Mr Park is now questioning the decision to include "functioning ecosystem processes" in Policy 12-6(a)(i)(B) as was agreed in the expert conferencing statement.[9]

14. While I agree that "functioning ecosystem processes" is an important consideration, I do not consider that it should be an *additional* consideration that qualifies the 'LENZ rarity' criterion. In the *FOSS* case this type of criterion was included as a separate criterion under the heading "ecological context" (referring again Appendix 8 of the second Interim Decision). The wording adopted in that decision (and supported by me) was:

> *"[t]he ecological context of the wetland has one or more of the following functions or attributes:*
>
> ...

[7] Wording agreed for Policy 12-6(a)(i)(B) during Expert conferencing ("*Memorandum regarding Record of Technical Conferencing on Monday 30 January 2012 on Biodiversity*") and aligned with the definition proposed by O'Connor et al (1990).
[8] Kelly and Park (1986).
[9] "Memorandum regarding Record of Technical Conferencing on Monday 30 January 2012 on Biodiversity".

(d) it makes an important contribution to the ecological functions and processes within the wetland".

Thus, the contribution of a site to such processes could trigger significance alone.[10] Clearly, when another of the criteria is triggered (such as rarity) this would become secondary to the overall assessment of significance and by no means would be required.

15. I do however agree with Mr Park's paragraph 6.4 where he states *"For an ecologist undertaking an inspection of a site, to ignore the condition of that site and whether or not ecosystem processes are intact and robust would be to ignore fundamental parts of the ecology of a site".*

16. Assessing the intactness and robustness of processes would be a pre-requisite before investigating the worth of maintaining, enhancing or restoring a wetland site as highlighted in paragraph 39 of my primary evidence (and above). For some of the habitats listed in Schedule E, scientists have a range of options to maintain, enhance or restore processes. It may also be helpful in the assessment of the impact of an activity on the site or even off the site - drainage for instance would likely heavily impact on wetland processes if within or nearby a wetland site. This type of analysis is provided for in Policy 12-6(b) of the One Plan. However it is not an additional requirement to determine *significance* if a wetland type has less than 20% remaining in the Region, or was originally rare in New Zealand.

Evidence of Ms Wharfe

17. Ms Wharfe refers to the restriction on activities adjacent to Sites of Significance – Aquatic ("SOS-A"), which are categorised as at-risk habitats in Schedule E to the One Plan.

18. The SOS-A sites were identified by examining the distribution records from the New Zealand National Freshwater Fish Database between 1991 and 2006 to identify sites where one or more of the nationally and regionally rare/threatened

[10] This is different to what Mr Park is saying in the first sentence of his paragraph 6.10: "*Where I do agree with the appellants is that functioning ecosystem processes alone is not determinative of ecological significance.*"

species as listed in Table One below were known to occur (McArthur et al, 2007).

Table One: List of species used for identification of SOS-A.

	Current threat ranking*
Giant kōkopu	Declining
Kōaro	Declining
Brown mudfish	Declining
Lamprey	Declining
Bluegill bully	Declining
Dwarf galaxiid	Declining
Banded kōkopu	Not threatened
Shortjaw kōkopu	Declining
Redfin bully	Declining
Whio	Threatened, nationally vulnerable**

**Allibone, Richard; David, Bruno; Hitchmough, Rodney; Jellyman, Donald; Ling, Nicholas; Ravenscroft, Peter; and Waters, Jonathan (2010) 'Conservation status of New Zealand freshwater fish, 2009'.* New Zealand Journal of Marine and Freshwater Research, Vol 44:4, 271-287

***Miskelly CM, Dowding JE, Elliot GP, Hitchmough RA, Powlesland RG, Robertson HA, Sagar PM, Scofield RP, Taylor GA 2008. Conservation status of New Zealand birds, 2008.* Notornis 55: 117-135.

19. Schedule E identifies areas comprising exotic or indigenous woody vegetation within 20m of a SOS-A as being an 'at-risk' habitat type. I support the recognition of the importance of this habitat type because of the strong relationship between riparian vegetation and instream aquatic values. I understand that the 20m set-back from SOS-A applies to a restricted area of the Region, and applies only to the areas comprising woody vegetation. [11]

[11] Schedule E Horizons One Plan Definition of "Riparian Marin" as an At-risk habitat: *"Any indigenous* or exotic woody vegetation* that is forest*, treeland*, scrub*, or shrubland*, that is not classified elsewhere in Schedule E as rare* or threatened*, within 20m landwards from the top of the river^ bank adjacent to a site* identified in Schedule AB as being a Site of Significance – Aquatic"".*

20. Including this habitat in Schedule E recognises the importance of that vegetation not only just the habitat type itself, but also the linkages and processes crucial to the protection of that aquatic habitat.

21. One benefit of a 20m buffer for vegetation clearance around waterways is to provide an environment around the waterway that is more similar to its original context. Woody vegetation communities, such as forests, have a different microclimate to open country. Forest environments are shadier than open cultivated land. They are also usually more humid, less windy, have different precipitation regimes, and are buffered from large shifts in temperature.

22. Vegetation adjacent to SOS-aquatic is important as it provides shading, spawning habitat, is a food source, limits sediment and nutrient inputs and provides habitat variation.

23. Therefore I agree with Ms Maseyk that, considering the regional importance of SOS-A, it is appropriate to restrict vegetation clearance, land disturbance and cultivation within these areas.[12]

[12] Refer "*Response of Fleur Maseyk to Supplementary Evidence of Technical Experts for the Biodiversity Hearing*" 16 January 2009 at paragraphs 10 – 19.

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