

Memorandum



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Attention: Bruce Geden

Company: GWRC

Date: 19.05.2015

From: Dr Vaughan Keesing

Message Ref: Wairarapa Water Use Project Ecological Review

Dear Bruce

Following my initial review of the desk top analysis and a following discussion with the principal Author (Mr Jamie Steer, GWRC), I have been requested by yourself to carry out a peer of the analysis suggested by my review.

My earlier reviewed noted several things, firstly in regard to data accessed I suggested the potential to include a search of other databases, including: NZ ornithological database, the NZ herpetological database, the NZ freshwater fish database, the DOC bioweb data base. The review however, acknowledged that these (especially the terrestrial) data bases are likely to add nothing new to the knowledge of the particular sites, but to be sure those data bases could have been checked and the assessment referenced that outcome.

Principally the primary difference between the current assessment and my review opinion is the use of the LENZ threatened environment layer. The Authors of the current analysis used the LENZ cover data to establish where value for potential vegetation lay (that is, values irrespective of the current landcover vegetation) and so assess where under-represented categories of the "environment" are and which might be returned to an indigenous system sometime in the future. This is not an incorrect approach but another, perhaps more RMA relevant approach, is to change the focus to only value LENZ category's where indigenous vegetation is present thereby effectively making the LENZ category have no influence where there is no indigenous system present.

I have used this alternative approach to rework the LENZ classification analysis in the terrestrial sub-theme previously undertaken. I have used Google earth aerial photography, the current report, and the LCDB results to establish the extent and type of indigenous vegetation generally within the areas influenced by the inundations to rank the sites in terms of threat level and indigenous systems presence. The following table reports my rankings and that of the previous rankings.

LENZ Threatened Environments Classification ² (combined with presence of indigenous systems)	This analysis	Previous
Tivdale: Mostly Category 2 with areas of Category 4 also.	3	2
White Rock Road: Mostly Category 2 with areas of Category 1 and 4 also.	2	1
Te Mara: Mostly Category 3 and 2 with areas of Category 1.	4	3
Wakamoekau: Mostly Category 1 and 2 with Category 3, 4 and 6 also.	4.5	3
Black Creek: Mostly Category 1 and 2 with Category 3, 4 and 6 also.	5	3
Mangatarere: Largely Category 2 and 1 with some Category 4.	1	5

The most significant change, using this re-analysis approach in regard to LENZ is that the Mangatarere site. This site has changed substantially from “permissive” to “restricted”, while the three northern sites (Whakamoekau, Black creek and Te Mara), with greater pastural cover, are now less restricted. Black Creek is now the third most preferred site in terms of terrestrial ecological effect.

Other data bases.

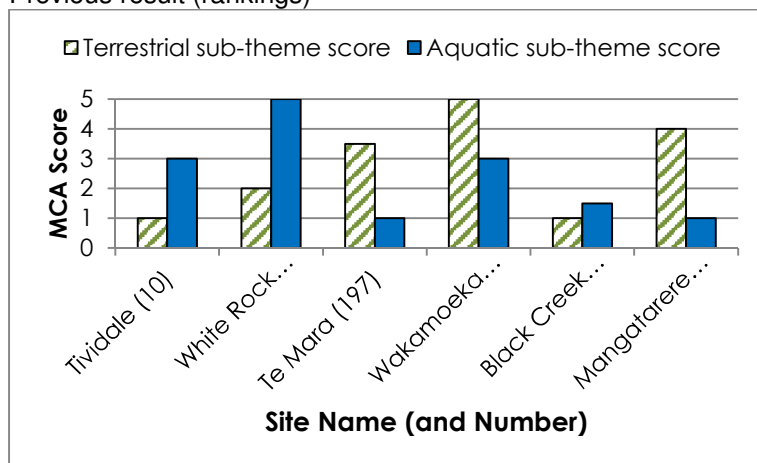
I have not been able to access all of the various other data bases, but they are unlikely to add much data. I did re-analyse the NIWA freshwater database and have made some changes resultant of that to two columns in the aquatic sub-theme analysis as follows:

Name	New - Habitat for Indigenous Fish Species of Conservation Interest	New - Habitat for Six or More Migratory Indigenous Fish Species	Previous result	New Result
Tividale	Yes	No.	5	2
White Rock Rd	Yes	Yes	5	1
Te Mara	Yes.	Yes.	2	4
Wakamoekau	No	No.	2	5
Black Creek	Yes.	No.	1	5
Mangatarere	Yes.	Yes	3	3

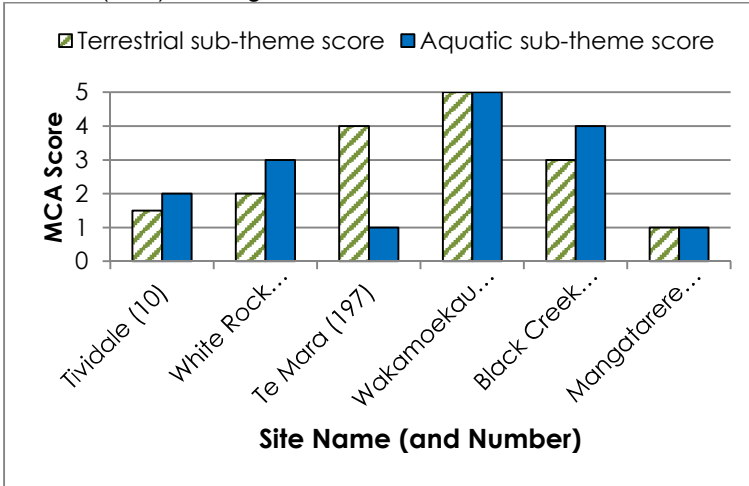
The changes here affect Black Creek and Wakamoekau switching values with Tividale and White Rock. This assumes that the GWRC did not use un-published data which I am unaware of, and were I have only uses data in or above the inundations in those particular waterways.

Graphically the results of both analysis were and are now as follows:

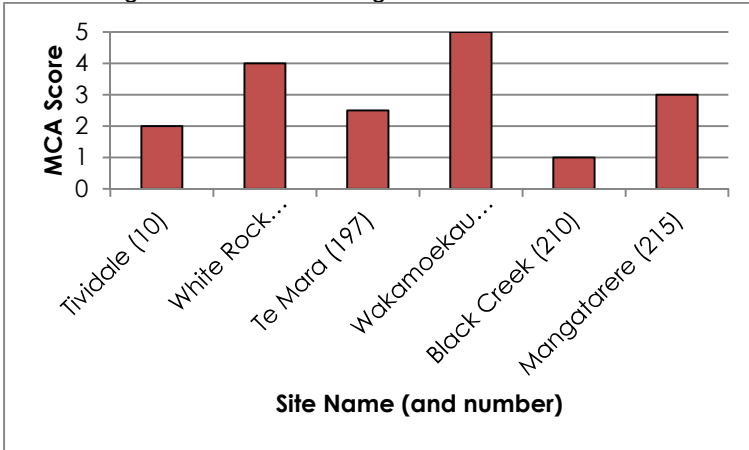
Previous result (rankings)



Current (new) rankings



The averaged combined rankings were:



From revision the new combined ecological rankings are:



The overall outcome of this review and its suggested modifications are as follows:

Name	Previous Ranking (1 least favoured, 6 most favoured (fewest issues))	The new current ranking
Tividale	2	2
White Rock Rd	5	4
Te Mara	3	4
Wakamoekau	6	6
Black Creek	1	5
Mangatarere	4	1

This review has substantially changed the ranking of the Mangatarere and Black Creek sites.

A caveat on this work is that the rankings all require a level of speculation as they are from limited desk top analysis and reliance on data bases and visual imagery interpretations which are also at the scale required limited. Until actual site visits and data collection are undertaken these results must be viewed in the light of those limitations.

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Boffa Miskell Ltd
Ecologist
19.05.2015