



## MEMO

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## Lakes in the Wellington region with outstanding aquatic vegetation values: Technical memo to support Schedule A2 of the draft Natural Resources Plan

### Introduction

This memorandum briefly summarises an assessment undertaken to identify lakes in the Wellington region with outstanding aquatic vegetation values for inclusion in Schedule A2 of the draft Natural Resources Plan (dNRP) (GWRC 2014). “Outstanding” has been evaluated in the context of its use in the National Policy Statement for Freshwater Management (NPS-FM, MfE 2014).

### Methods

Mary de Winton and Dr Paul Champion (NIWA), two nationally recognised lake vegetation specialists, were engaged to carry out a desktop assessment of known submerged aquatic vegetation values in the Wellington region. This assessment, documented in full in de Winton and Champion (2014), included the establishment of scientifically robust and transparent assessment criteria and a ranking system to score each lake. The assessment was limited to 11 lakes (one being the Upper Karori Reservoir, an artificial waterbody) where information was available to enable an assessment.

Expert knowledge and a national of overview were used to identify seven assessment criteria (with a scoring system then developed for each):

- Habitat size – larger and deeper lakes tend to be more resilient
- Connectivity – linkages with other wetlands and lakes increase the effective habitat area
- Key species – eg, presence of freshwater mussels that assist with maintaining water quality
- Buffering – extent of shoreline vegetation and amount of native vegetation catchment cover
- Diversity – indicated by high native species richness and representation across a number of functional plant groups (eg, emergent, vascular, floating)
- Integrity – proportion of the submerged vegetated littoral (ie, near shore) zone occupied by native submerged plants
- Rarity – presence of endangered species (eg, nationally endangered, at risk, etc.)

To determine which lakes should be recognised as outstanding (and regionally significant), de Winton and Champion (2014) drew on NIWA’s Aquatic Plant Database which comprises data from

over 915 submerged surveys over 380 lakes across New Zealand. A score of >25 was deemed the cut-off for “outstanding”.

### **Key findings**

The assessment by de Winton and Champion (2014) identified the following lakes as being outstanding for their submerged vegetation values:

- Lake Kohangatera (score = 29.1)
- Lake Kohangapiripiri (score = 26.4)

The outstanding status of Lake Kohangatera concurs with its ‘Excellent’ LakeSPI status and comments from NIWA that its botanical elements qualify the lake as a nationally outstanding example of a lowland lagoon system (de Winton et al. 2011; de Winton 2013).

The assessment also provisionally identified Lake Wairarapa as being outstanding (score = 26.7) but noted that insufficient information currently exists to enable a robust assessment against all criteria (ie, some assumptions had to be made). For this reason, it is not considered appropriate to include Lake Wairarapa in Schedule A2 based on its aquatic plant values. However, if possible, priority should be given to surveying the aquatic plant communities of Lake Wairarapa in the near future.

### **References**

de Winton M and Champion P. 2014. *Submerged vegetation-based criteria for lakes in the Wellington region*. Report No. HAM2014-058 prepared for Greater Wellington Regional Council by NIWA, Hamilton.

de Winton M, Champion P and Wells R. 2011. *LakeSPI assessment of the Parangarahu Lakes and Lake Pounui with reference to management of ecological values*. Report No. HAM2011-038 prepared for Greater Wellington Regional Council by NIWA, Hamilton.

de Winton M. 2013. *LakeSPI survey of Lake Kohangatera – 2013*. Report No. HAM2013-052 prepared for Greater Wellington Regional Council by NIWA, Hamilton.

GWRC. 2014. *Draft Natural Resources Plan for the Wellington region – Te Tikanga Taiao o Te Upoko o Te Ikaa a Maui*. Greater Wellington Regional Council, Publication No. GW/EP-G-14/87, Wellington.

MfE. 2014. *National Policy Statement for Freshwater Management 2014*. Publication ME 1155, Ministry for the Environment, Wellington.