greater WELLINGTON
REGIONAL COUNCIL
Te Pane Matua Taiao

MEMO

PREPARED BY Philippa Crisp, Environmental Science Department

REVIEWED BY Juliet Milne, Environmental Science Department
Hayley Vujcich, Environmental Policy Department

DATE 4 May 2014

Recommended changes to Schedule H attributes and outcomes for the Draft Regional Plan: Wetlands

1. Introduction

Schedule H of the Regional Plan: Working Document for Discussion (WDFD, GWRC 2013) included numeric and narrative outcomes for a range of values associated with wetlands. This memorandum sets out recommended changes to outcomes for wetlands in Tables H3.1–H3.2 of the WDFD for inclusion in the draft Natural Resources Plan (dNRP). These recommended changes take into account stakeholder feedback on the WDFD and further external specialist advice sought by GWRC.

The recommended changes to wetland attributes and outcomes for the dNRP are provided in Appendix 1.

1.1 Stakeholder feedback

Feedback from stakeholders was received during and following GWRC workshops held late in 2013 and from the Department of Conservation in March 2014. The majority of questions for wetlands related to policy issues, rather than technical aspects.

1.2 External expert advice

In February 2014 a workshop was held to discuss wetland ecosystem health outcome setting. Dr Bev Clarkson (Landcare Research) and Dr Hugh Robertson (Department of Conservation) were the external wetland specialists that attended the workshop. The technical advice is summarised in Crisp (2014) and key findings have been incorporated into the recommended changes set out in this memorandum. Subsequent further advice was also sought from Dr Clarkson during the development of narrative outcomes.

2. Aquatic ecosystem health and mahinga kai

A number of changes are recommended to Table H3.1 as a result of expert advice and to more closely align with attributes in the equivalent tables for rivers (Greenfield 2014), lakes (Perrie & Milne 2014) and coastal waters (Oliver et al. 2014):

1. Revise the list of wetland types – the wetland types have been listed in a new order to better reflect the sequence of water quality attributes that relate to the various wetland types. Saltmarsh has been removed because this wetland type is included within

estuaries under Table H5.1 for coastal waters (Oliver et al. 2014). Seepage has been removed, as it can fit into the other wetland types, such as fen, bog or swamp.

2. Include a qualifier that the pH values in Table H3.1 do not reflect those found in extremely oligotrophic wetlands (B. Clarkson, pers. comm. 2014).

3. Include a wider suite of attributes, principally in narrative form, that address:
   - biology (flora, fauna and mahinga kai);
   - water quality (pH, nutrients and toxicants);
   - substrate quality (nutrients, sedimentation rate and toxicants);
   - ecosystem intactness (wetland extent and connectivity); and
   - water quantity (water regime).

These changes are shown in Appendix 1.

3. Contact recreation and tangata whenua use

No changes are recommended to Table H3.2 for contact recreation. See Royal and Barriball (2014) for commentary on tangata whenua use.

References

Crisp P. 2014. *Wetland outcomes for in the Wellington region: Summary from a technical expert panel workshop.* Unpublished internal report (Document No. #1327158), Greater Wellington Regional Council, Wellington.

Greenfield S. 2014. *Recommended changes to Schedule H attributes and outcomes for the draft Natural Resources Plan: Rivers and streams.* Unpublished internal memo (Document No. #1346977), Greater Wellington Regional Council, Wellington.

GWRC. 2013. *Regional Plan: Working document for discussion.* Greater Wellington Regional Council (unpublished), Wellington.

Oliver M, Milne J and Greenfield S. 2014. *Recommended changes to Schedule H attributes and outcomes for the draft Natural Resources Plan: Coastal waters.* Unpublished internal memo (Document No. #1353321), Greater Wellington Regional Council, Wellington.

Perrie A and Milne J. 2014. *Recommended changes to Schedule H attributes and outcomes for the draft Natural Resources Plan: Lakes.* Unpublished internal memo (Document No. #1353298), Greater Wellington Regional Council, Wellington.

Royal C and Barriball L. 2014. *Recommended changes to Schedule H: Mahinga kai and tangata whenua use.* Unpublished memorandum (Document No. #1354711), Greater Wellington Regional Council, Wellington.

Appendix 1: Recommended changes to Table 3.1 – aquatic ecosystem health and mahinga kai

~~Table H3.1: Aquatic ecosystem health and mahinga kai~~

<table>
<tr><td>~~Water type~~</td><td colspan="7">~~Natural wetlands~~</td></tr>
<tr><td>~~Value~~</td><td colspan="7">~~Aquatic ecosystem health and mahinga kai~~</td></tr>
<tr><td>~~Broad outcome~~</td><td colspan="7">~~Natural wetland water quality, hydrologic regime and habitat safeguards healthy aquatic ecosystems and supports mahinga kai~~</td></tr>
<tr><td rowspan="8">~~Outcome~~</td><td></td><td colspan="4">~~Water quality~~</td><td colspan="2">~~Habitat~~</td><td>~~Mahinga kai~~</td></tr>
<tr><td></td><td>~~Hydrologic regime~~</td><td>~~Physicochemical indicators~~</td><td>~~pH~~</td><td>~~Nutrient status~~</td><td>~~Flora and fauna~~</td><td>~~Ecosystem function~~</td><td></td></tr>
<tr><td>~~Bog~~</td><td rowspan="6">~~Water table depth and hydrologic regime is appropriate to the wetland type~~</td><td rowspan="6">~~Physiochemical characteristics, including conductivity, are appropriate to the wetland type~~</td><td>~~3-4.8~~</td><td>~~Low or very low~~</td><td rowspan="6">~~Native plants dominate and introduced plants and animals do not adversely impact the integrity of the wetland~~</td><td rowspan="6">~~Natural wetlands have fair ecosystem intactness~~
~~Significant wetlands have good ecosystem intactness~~
~~Outstanding wetlands have excellent ecosystem intactness~~</td><td rowspan="6">~~Sustainably harvestable populations of mahinga kai species are present in or migrating through the wetland~~</td></tr>
<tr><td>~~Fen~~</td><td>~~4-6~~</td><td>~~Low to moderate~~</td></tr>
<tr><td>~~Marsh~~</td><td>~~6-7~~</td><td>~~Moderate to high~~</td></tr>
<tr><td>~~Seepage~~</td><td>~~4-7~~</td><td>~~Low to high~~</td></tr>
<tr><td>~~Swamp~~</td><td>~~4.8-6.3~~</td><td>~~Moderate to high~~</td></tr>
<tr><td>~~Saltmarsh~~</td><td>~~4.9-8~~</td><td>~~Moderate~~</td></tr>
<tr><td>~~Limit~~</td><td colspan="7">~~Relevant resource use limits to be defined~~</td></tr>
</table>

Table H3.1: Aquatic ecosystem health and mahinga kai

Water type	Natural wetlands													
Value	Aquatic ecosystem health and mahinga kai													
Broad outcome	Wetland water quality, quantity and habitat safeguards healthy aquatic ecosystems and supports mahinga kai													
Outcome	**Wetland type**	**Biology**			**Water quality**				**Substrate quality**			**Ecosystem intactness**		**Water quantity**
		Flora	**Fauna**	**Mahinga kai**	**pH and nutrients**	**pH**	**Nutrient status**	**Toxicants**	**Nutrients**	**Sedimentation rate**	**Toxicants**	**Wetland extent**	**Connectivity**	**Water regime**
	Bog	Native plant communities are resilient and their structure, composition and diversity are appropriate to wetland type	Native faunal communities (including those of birds, fish, lizards and invertebrates) are resilient and their structure, composition and diversity are appropriate to wetland type	Sustainably harvestable populations of mahinga kai species are present in quantities, size and of a quality that is appropriate for the area	The nutrient and pH regime is appropriate to wetland type and nutrient concentrations do not cause an imbalance in populations of biota	3.0-4.8	Low or very low	Toxicant concentrations are less than those which can cause toxicity impacts to biota	Soil nutrient concentrations do not cause an imbalance in plant, invertebrate or fish communities	The sedimentation rate is within an acceptable range of that expected under natural conditions	Toxicant concentrations do not cause unacceptable effects on aquatic plant, invertebrate and fish communities	Wetland extent maintains or provides for the range of wetland structure and function appropriate to wetland type	All natural upstream and downstream connections and/or groundwater levels are maintained, as appropriate to wetland type	Water table depth and hydrologic regime is appropriate to wetland type
	Fen					4.0-6.0	Low to moderate							
	Swamp					4.8-6.3	Moderate to high							
	Marsh					6.0-7.4	Moderate to high							