

## Memo

Date	12 February 2019
To	Andrea Richardson - Senior Planner
CC	Carl Hanson - Groundwater Science Manager
From	Lisa Scott - Senior Scientist: Groundwater

## Corrections to map layer '*LWRP - Aquifer Systems and Sediments*'

### The problem

Our groundwater scientists have noticed that one of the map layers in the LWRP map volumes relating to groundwater resources may need revising. Consents planners raised the issue with us that on the '*Aquifer Systems and Sediments*' layer there are small areas within Christchurch City which are surrounded by the '*Coastal Confined Gravel Aquifer System*' but are not mapped as '*Semi-confined and Unconfined Aquifers*' or as part of the '*Coastal Confined Gravel Aquifer System*'. This has caused some confusion in applying the rules of the LWRP to activities within the unmapped areas (Figure 1). On looking at the map, it appears that the gaps in the map have arisen from an artefact of the GIS processing when combining previous datasets.

### Proposed solution

To fix the problem, I recommend that the four easternmost unmapped areas be merged with the '*Coastal Confined Gravel Aquifer System*'. The westernmost unmapped area should be designated '*Semi-confined and Unconfined Aquifer*' because of the thinner surficial fine-grained sediments and potential downward hydraulic gradients in the Lincoln Road area. I have asked the ECan GIS team to prepare a revised layer with these changes for the Omnibus Plan Change 2019.

The proposed revisions are consistent with hydrogeological vulnerability mapping of the Christchurch System (Weeber, 2008) and with previous advice given by Carl Hanson and me to our consents planning team when processing resource consent applications for land use or discharges in the unmapped areas.

### Impact

The revisions to the LWRP aquifer systems and sediments map layer will provide clarity for landowners in Christchurch and help consents planners to assess the status of applications.

### Reference

Weeber, J 2008: Christchurch groundwater protection: A hydrogeological basis for zone boundaries, Variation 6 to the Proposed Natural Resources Regional Plan, Technical Report No. U08/21, Environment Canterbury, ISBN 978-1-86937-802-8

<b>Internal review:</b>	Maureen Whalen, Groundwater Science Team Leader	February, 2019
<b>Approved for release:</b>	Tim Davie, Chief Scientist	May, 2019

**File reference:** <https://punakorero/groups/plansec/omnibus19/research/>

**Attachments:** 2 figures

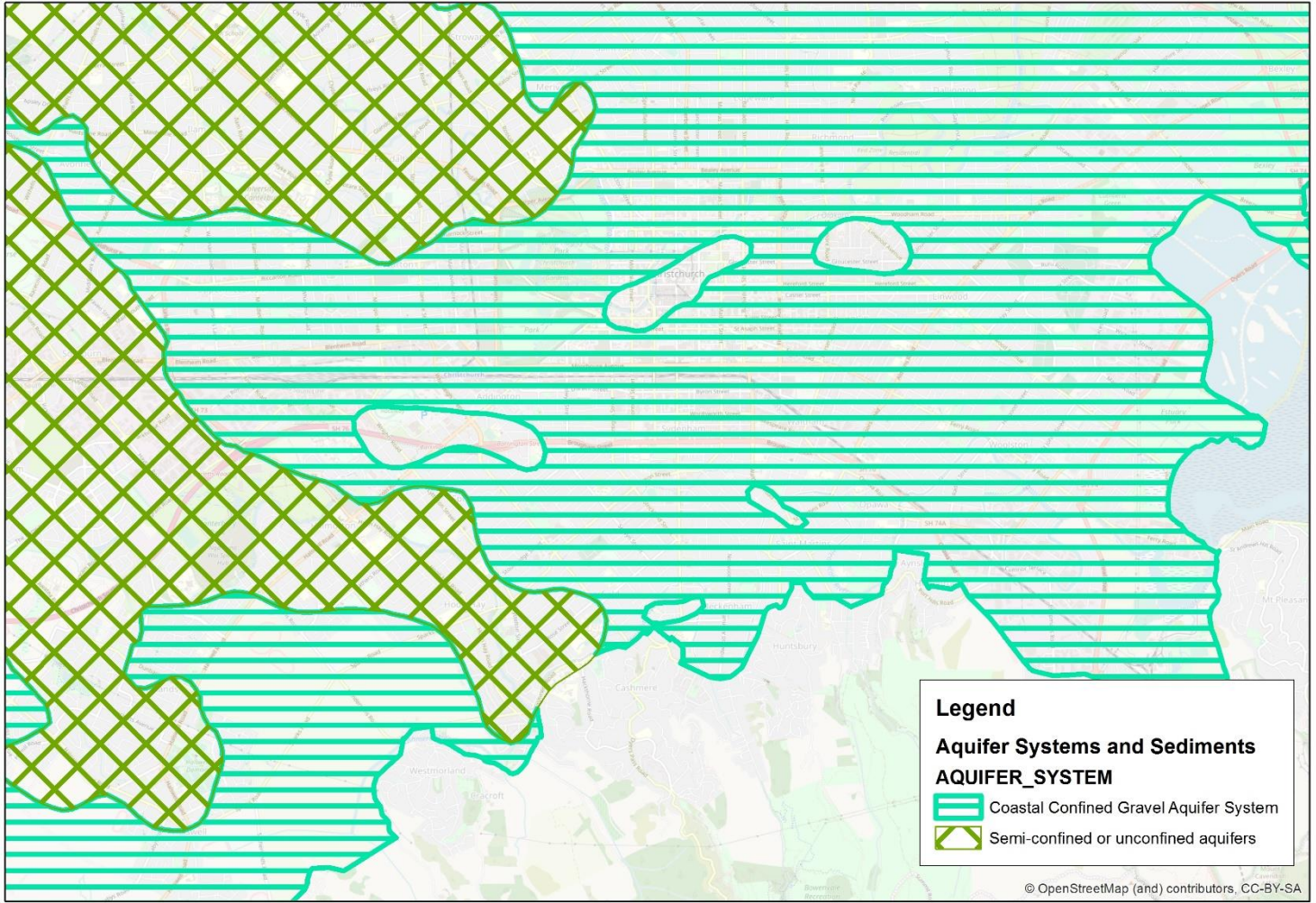


Figure 1: Gaps in the 'Aquifer Systems and Sediments' map layer over Christchurch City

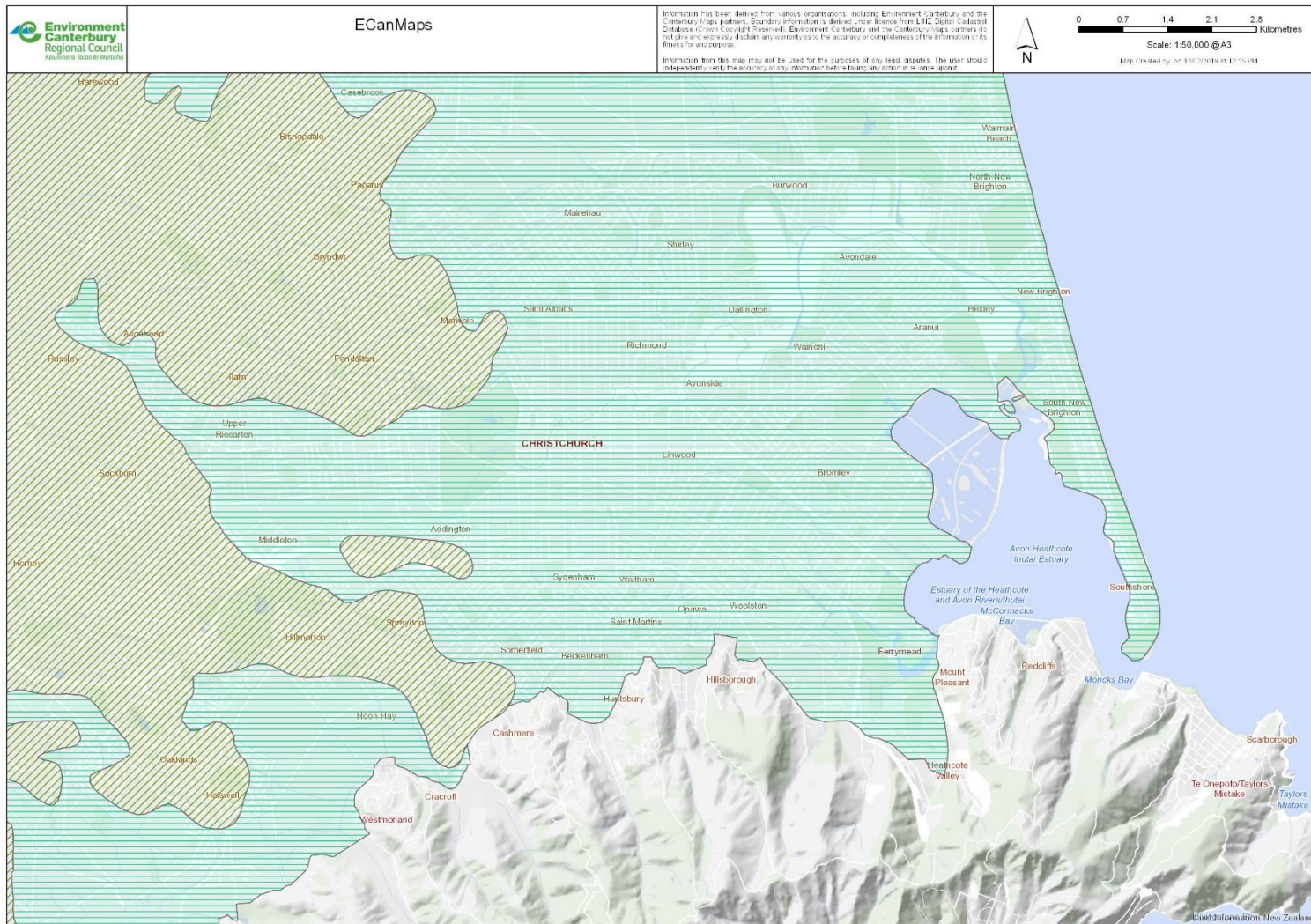


Figure 2: Map layer with gaps in the aquifer classification removed