Issued 10 January 2022

Auckland Hydrology Situation Report

Research and Evaluation Unit | RIMU | Auckland Council

Rainfall | Soils | Rivers | Aquifers

Regional summary

The New Zealand Drought Index for the Auckland Region has risen recently but remains below the first category of Dry. Regional monthly rainfall was approximately equal to the long-term average for December. Soil moisture status currently ranges from Normal to Very Low. All sites with Very Low status are in the south of the region. Most rivers are above the mean annual low flow (MALF). Groundwater levels vary across the region but are within the Normal range at many sites. Groundwater sites with Low status are mostly in the south, particularly for deep aquifers which respond slowly to rainfall.

Current drought index

The New Zealand Drought Index (NZDI) is used to determine the severity of drought conditions across the country. The latest NZDI value for Auckland was 0.63 (7 January 2021), which is below the first NZDI category of Dry (0.75-1.00). A chart of the NZDI for the Auckland region is shown in Figure 1.

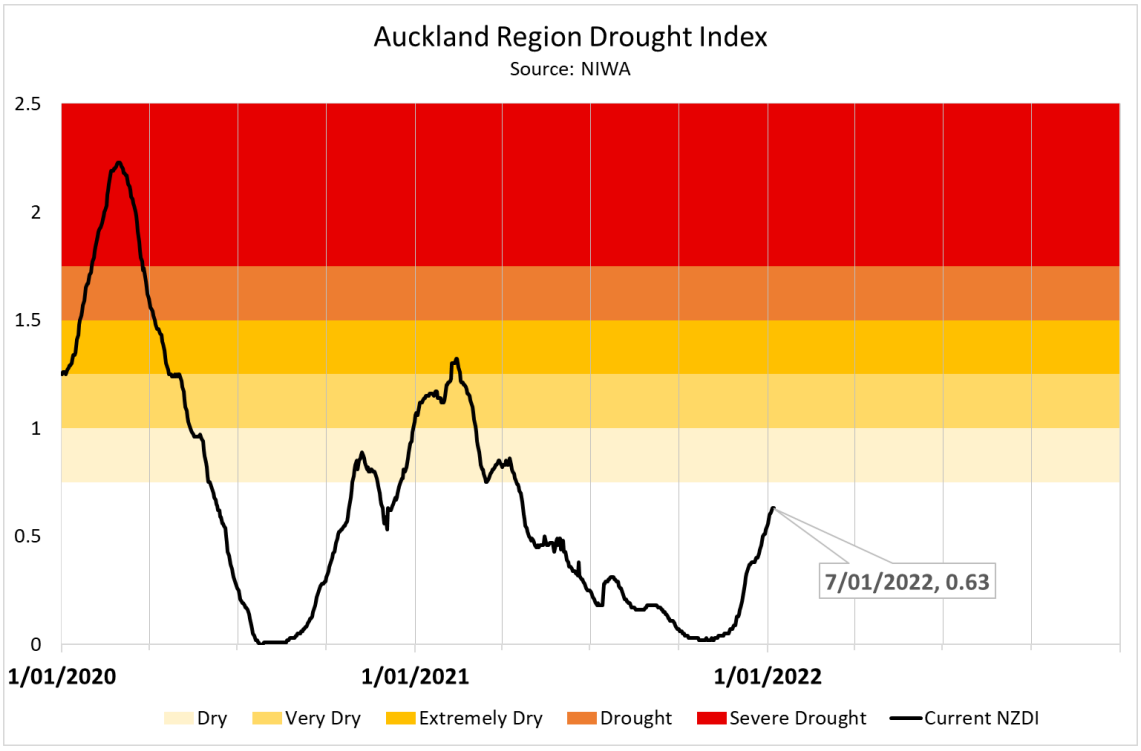

Figure 1: Auckland Region Drought Index 2020-2022 (data source: NIWA).

Rainfall

Rainfall for December 2021 ranged from 74 to 184mm with a regional average of 108mm, approximately equal to the long-term regional average (Figure 2).

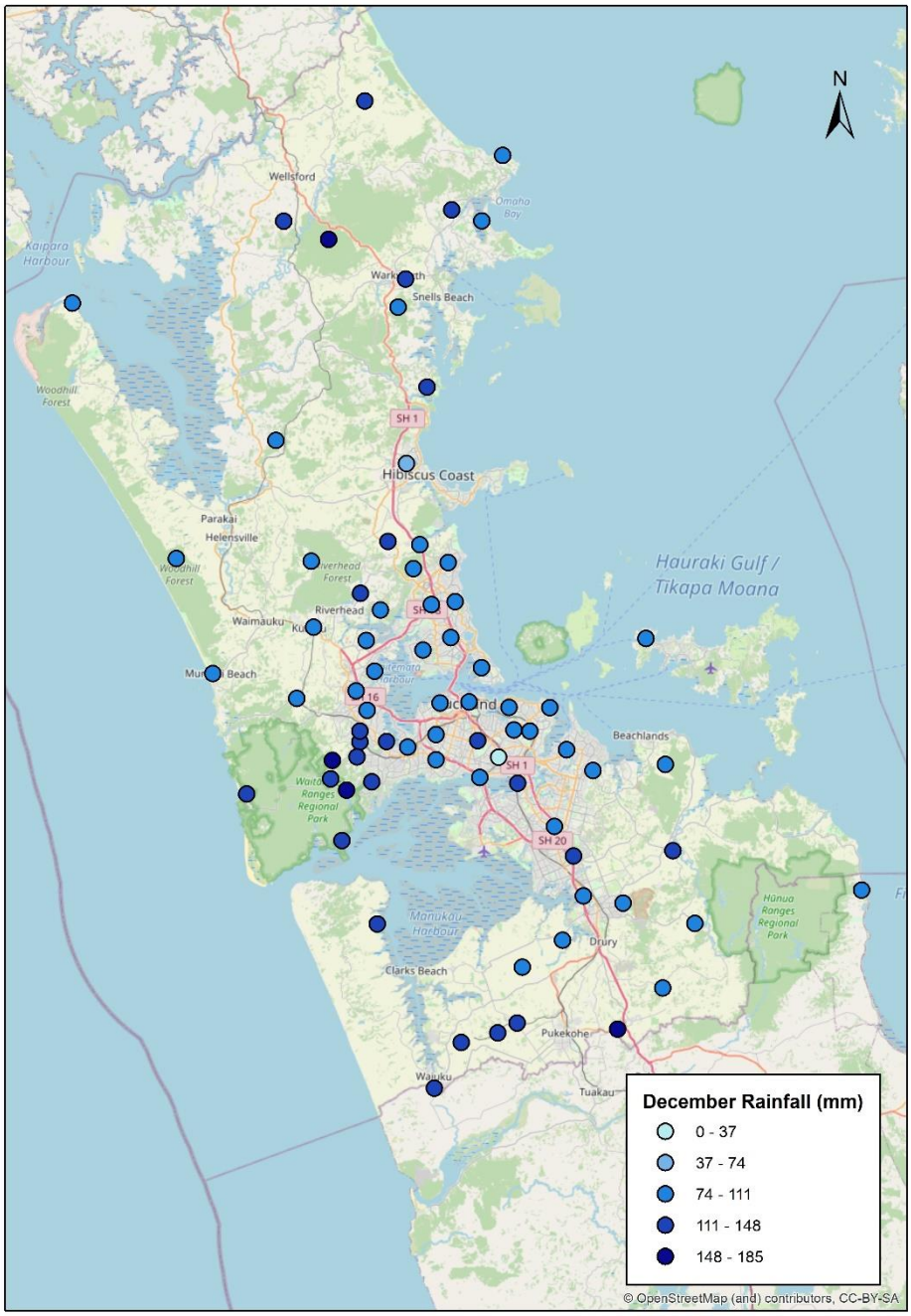

Figure 2: Total rainfall (mm) for December 2021.

Soil moisture

Soil moisture is currently in the Normal to Very Low status, with most sites in the central and northern parts of the region at Normal soil moisture levels. Sites in the Very Low range are all in the south. Soil moisture sites are shown in Figure 3.

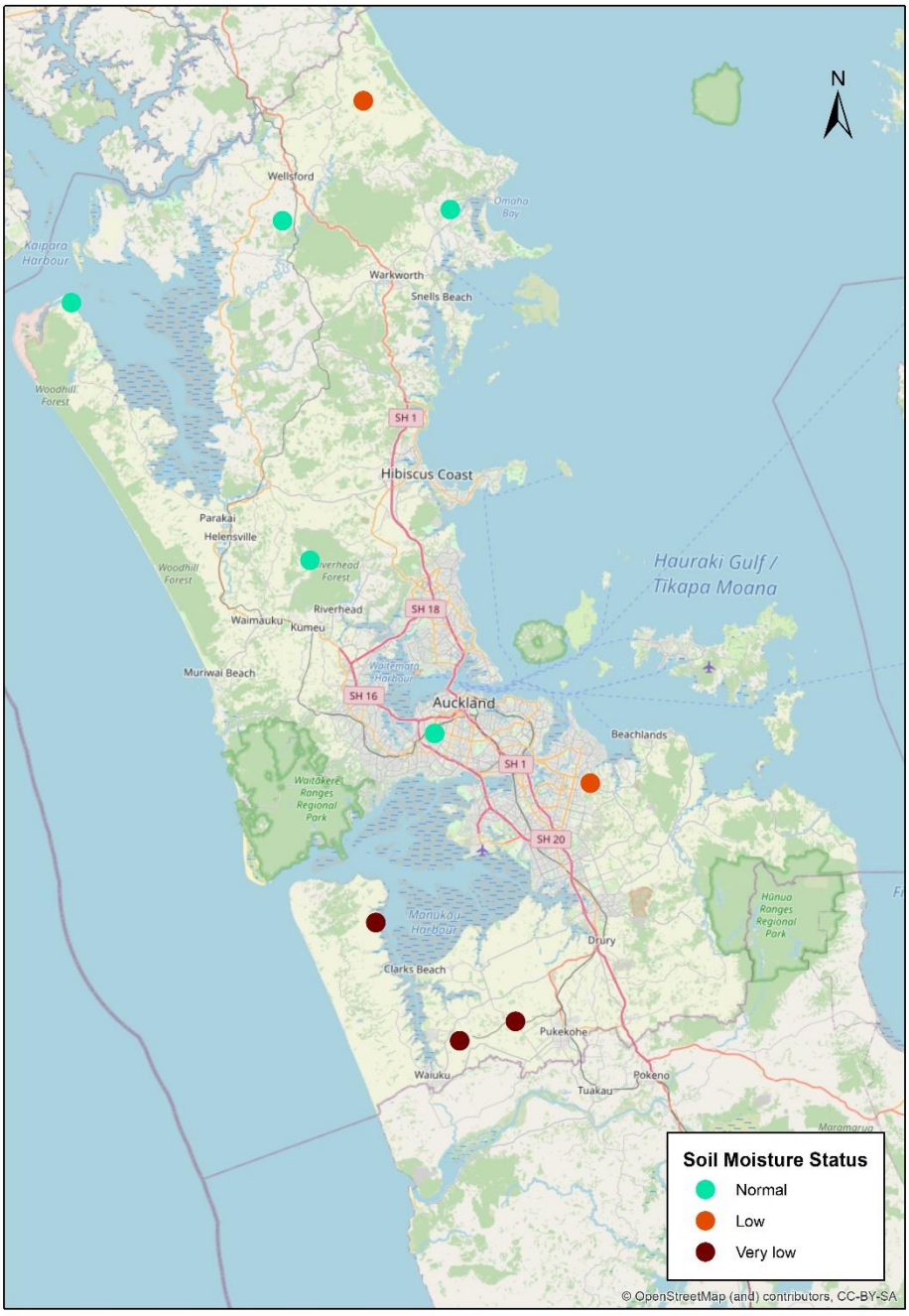

Figure 3: Soil moisture category relative to long-term statistics on 10 January 2021.

River flows

Most river flow sites are above the mean annual low flow (MALF). Rivers that have dropped below the MALF include the Kaukapakapa River, Wairau Creek, Opanuku Stream, Oratia Stream, and the Wairoa River. The locations of sites and the flow relative to MALF are shown in Figure 4.

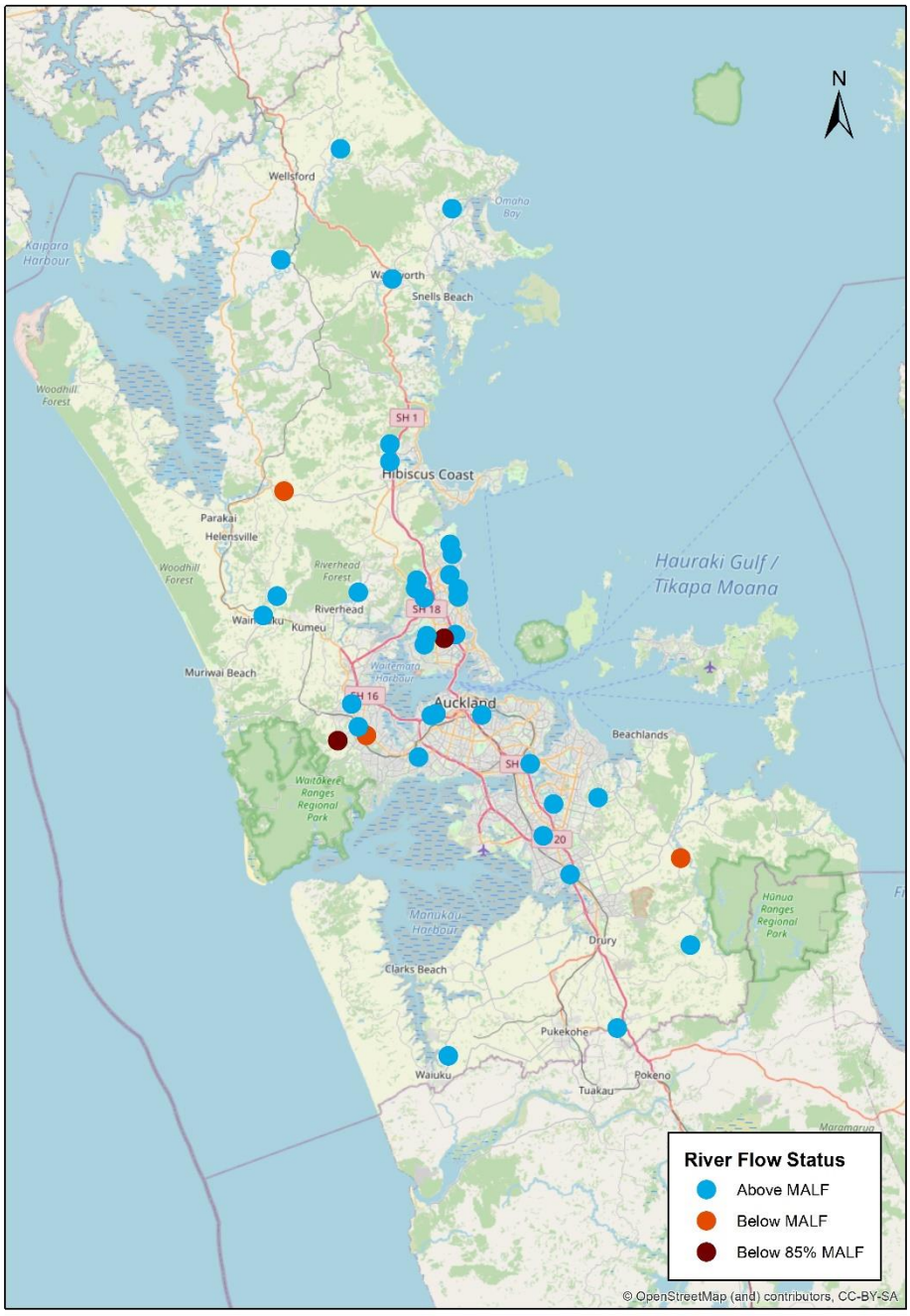

Figure 4: River flow on 10 January 2021 relative to the mean annual low flow (MALF).

Aquifer water levels

Most groundwater levels from the isthmus north are in the Normal to Very High range for this time of year, with one exception in the Omaha Waitemata aquifer. Several aquifers in the south are still at Low levels for this time of year. Most of the aquifers in the Low category are deep Waitematā sandstones and Kaawa sand/shellbeds which respond slowly to rainfall recharge. Groundwater monitoring sites and groundwater level category are shown in Figure 5.

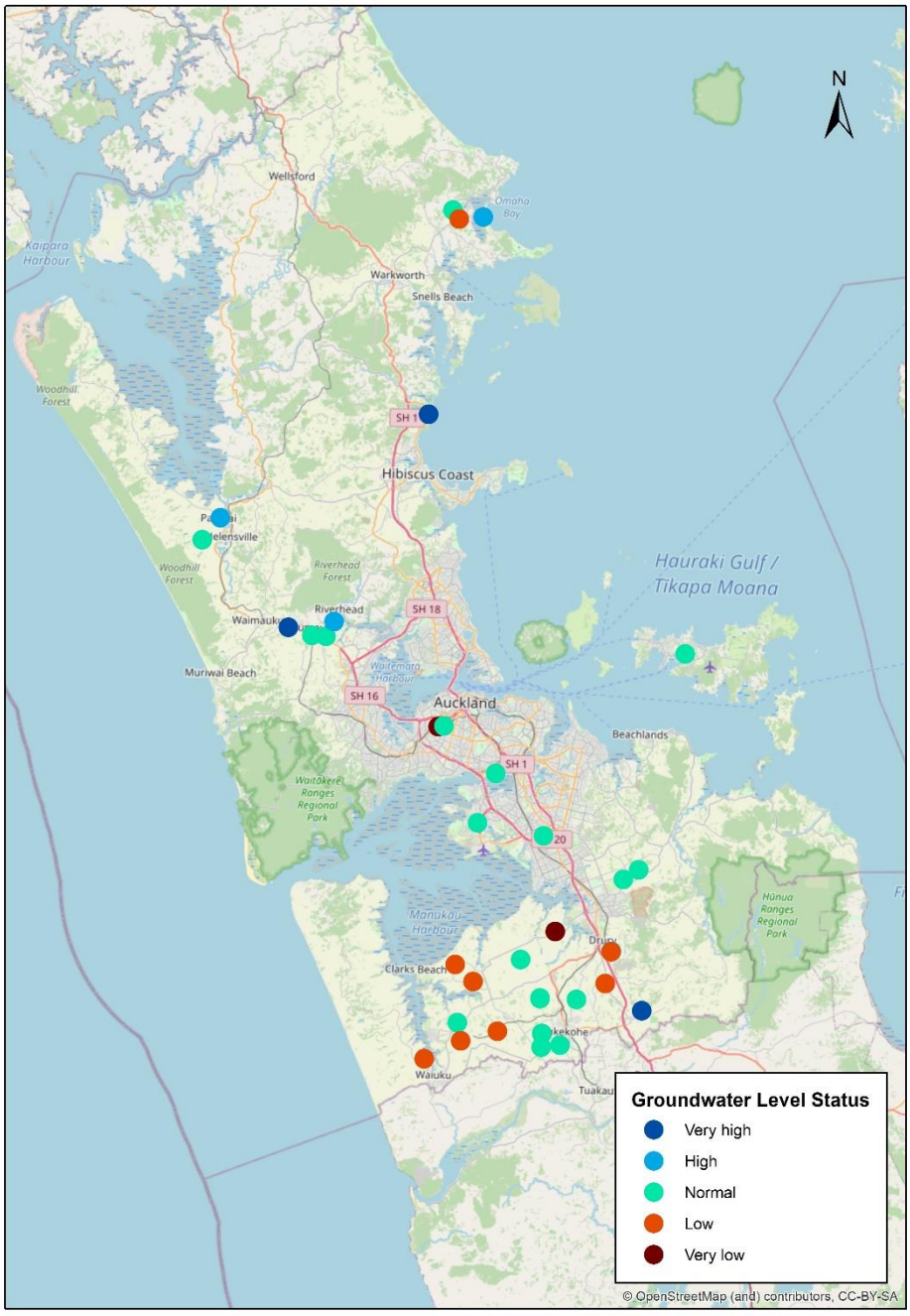

Figure 5: Groundwater levels relative to long-term statistics for 10 January 2021.

Disclaimer

This report contains provisional data and is intended for informational purposes only. For detailed questions concerning hydrometric data, please email EnvironmentalData@aucklandcouncil.govt.nz.

Primary contact

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