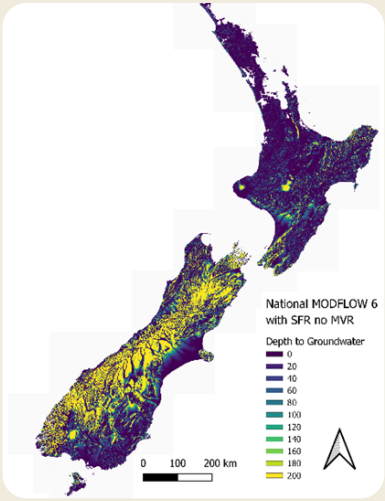
Factsheet 04

Te Whakaheke o Te Wai

National Groundwater Model

A national-scale groundwater modelling framework has been developed that links with the rapid creation of localised groundwater models (see Factsheet 9). The model provides a national overview of groundwater levels, and groundwater - surface water interaction. It provides the foundation for more decision-specific regional and local models, as well as information required for national policy. The ultimate goal is that the model will enable protection of freshwater in New Zealand, while managing and building resilience to threats such as climate change and land use intensification.



Inputs to the national groundwater model include:

- geology and soils
- climate
- surface water hydrology
- groundwater levels.

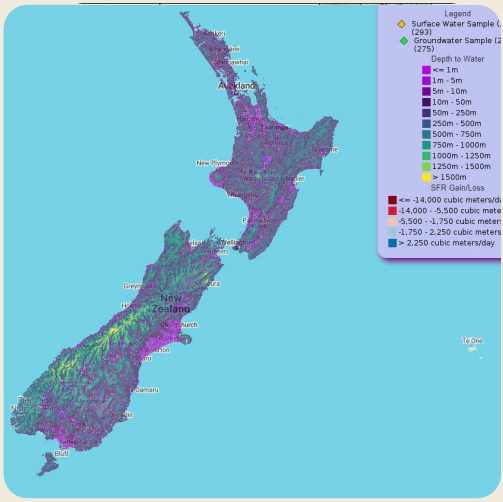
The National Groundwater Model has also provided the groundwater component of the NZ Water Model - Hydrology (NZWaM-Hydro) led by NIWA.

National Groundwater Model

Numerical models allow us to answer specific questions to guide management and engineering decisions. For example, models can establish how much water can be allocated without adversely affecting streamflow. They can also assess how climate change will impact water availability, optimise land use for improved productivity and water supply reliability, and evaluate whether managed aquifer recharge will achieve desired outcomes.

Outputs of the National Groundwater Model will be made available online for all to use. Key features of the online web map include:

- groundwater levels, visible at different depths
- groundwater - surface water interaction (e.g., streamflow losses/gains)
- ability to view at different scales (e.g., national, regional, local, property)
- minimum resolution of 1 km x 1 km
- link to regional models and reports on groundwater age



The interactive web map empowers partners in the public, commercial, and research sectors to explore and interpret model data across various areas of interest and scales. Users can overlay multiple model outputs simultaneously, enabling a more comprehensive analysis and deeper insights. The web map is available here: **https://data.gns.cri.nz/twotw**