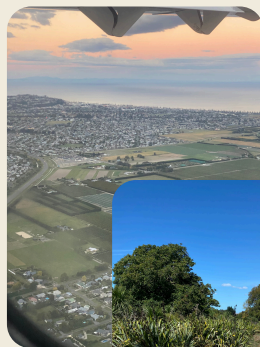


Te Whakaheke o Te Wai

Rapid Model Build

Our Rapid Model Build tools are developed to enable cost-effective and rapid creation of groundwater models across a range of scales. These models integrate with the National Groundwater Model (see Factsheet 4). This approach allows targeted design of models to more robustly explore specific questions at the scale of interest. For example to support decision-makers in forming effective freshwater management policies at local, regional, or national scales. Our nationally consistent capability also provides a foundation for groundwater representation in other models (e.g., NZWaM - Hydro).



Regional

Local



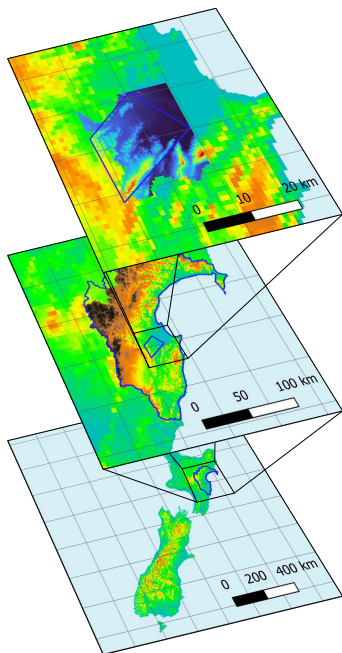
The Rapid Model Build framework is informed by continuous and consistent national-scale data and models such as:

- Geology (e.g., Hydrogeological Unit Map (HUM), GNS Science)
- Surface water (e.g., River Environment Class., NIWA)

Additional data is used to augment the model where available (e.g., SkyTEM - see Factsheet 1).



Rapid Model Build



Local

Example of a local model domain (100 m x 100 m resolution) for Bridge Pa catchment - see Factsheet 3.

Regional

Example model domain for Hawke's Bay. See Factsheet 10 (sub-regional model of Heretaua Plains).

National

Example of national model domain for New Zealand - see Factsheet 4 (National Model).

National scale models provide an overview of risk whereas regional and local scale models provide the required detail for designing mitigation and engineering solutions. By refining the scale of properties and processes, we extract more information from data and describe the uncertainty of our model predictions more accurately. In summary:

- we can better focus on local scale issues (e.g., respecting mātauranga Māori and community knowledge); and
- history match (calibrate) models to local scale information to reduce uncertainty of decision-critical predictions.

Surface water network: <https://github.com/mwtoews/surface-water-network> with DOI:10.5281/zenodo.6866082

Gridit: <https://github.com/mwtoews/gridit> with DOI:10.5281/zenodo.7030428