



15 years of zooming in and zooming out: Developing a new single scale national active fault database of New Zealand

William Ries, Robert Langridge, Pilar Villamor, Nicola Litchfield, Russ Van Dissen, Dougal Townsend, Julie Lee, David Heron, and Biljana Lukovic

GNS Science - Te Pu Ao, Lower Hutt, New Zealand (w.ries@gns.cri.nz)

In New Zealand, we are currently reconciling multiple digital coverages of mapped active faults into a national coverage at a single scale (1:250,000). This seems at first glance to be a relatively simple task. However, methods used to capture data, the scale of capture, and the initial purpose of the fault mapping, has produced datasets that have very different characteristics.

The New Zealand digital active fault database (AFDB) was initially developed as a way of managing active fault locations and fault-related features within a computer-based spatial framework. The data contained within the AFDB comes from a wide range of studies, from plate tectonic (1:500,000) to cadastral (1:2,000) scale. The database was designed to allow capture of field observations and remotely sourced data without a loss in data resolution. This approach has worked well as a method for compiling a centralised database for fault information but not for providing a complete national coverage at a single scale.

During the last 15 years other complementary projects have used and also contributed data to the AFDB, most notably the QMAP project (a national series of geological maps completed over 19 years that include coverage of active and inactive faults at 1:250,000). AFDB linework and attributes was incorporated into this series but simplification of linework and attributes has occurred to maintain map clarity at 1:250,000 scale. Also, during this period on-going mapping of active faults has improved upon these data. Other projects of note that have used data from the AFDB include the National Seismic Hazard Model of New Zealand and the Global Earthquake Model (GEM).

The main goal of the current project has been to provide the best digital spatial representation of a fault trace at 1:250,000 scale and combine this with the most up to date attributes. In some areas this has required a simplification of very fine detailed data and in some cases new mapping to provide a complete coverage. Where datasets have conflicting line work and/or attributes, data was reviewed through consultation with authors or review of published research to ensure the most to date representation was maintained. The current project aims to provide a coverage that will be consistent between the AFDB and QMAP digital and provide a free download of these data on the AFDB website (<http://data.gns.cri.nz/af/>).