recording sites in a blend of ground and structural recording locations. Thirty percent of the accelerographs in the network are digital and the remainder are film-recording mechanical-optical units designed and manufactured in NZ.

More than 4000 recordings have been obtained during the 30+ years of recording. The 600 largest have been fully processed to give instrument-corrected and filtered time histories (accelerations, velocities, displacements) and response spectra.

For each of the 600 processed records, three 3-component data files containing:

- raw acceleration time-histories
- fully processed time-histories (accelerations, velocities and displacements)
- response spectra

Support files giving information on the formats of the processed data files, locations of recorded events, locations, site information and ground class classifications for the recording sites, a listing of peak accelerations for all recordings and a list of related publications.

The cost of the CD-ROM is NZ$300 (includes GST, p & p). The CD is available from Jim Cousins, IGNS, PO Box 30 368, Lower Hutt, New Zealand.
Fax: +64 4 570-1440
email: *j.cousins@gns.cri.nz*

**Earthquake Commission Research Projects**

12 EQC funded research projects were completed in 1998. These projects were:

1. *Probability and Consequences of the Next Alpine Fault Earthquake* by Mark D Yetton (Geotech Consulting Ltd), Andrew Wells and Nick J Traylen.
2. *Earthquake-Induced Landsliding in New Zealand and Implications for MM Intensity and Seismic Hazard Assessment* by G T Hancox, N D Perrin, G D Dellow (Institute of Geological and Nuclear Sciences).
3. *SASW Measurement for the Calculation of Site Amplification* by A J Sutherland (University of Canterbury) and T C Logan (Opus Consultants).
4. *Racking Resistance of Bracing Walls in Low-Rise Buildings Subject to Earthquake Attack (Volume 1 & 2), (BRANZ Study Report SR 78)* by P D Herbert and A B King (BRANZ).
5. *Axial Behaviour of Bored Pile Foundations* by K J McManus (Dept. of Civil Engineering, University of Canterbury).
6. *Design of Permanent Slopes* by S A Crawford and P J Millar (Tonkin & Taylor Ltd).
7. *Attenuation of Weak Ground Motions* by Aasha Pancha and J John Taber (School of Earth Sciences, Victoria University of Wellington).
8. *Performance of Steel Braced Members* by L Sukendro Leowardi and Warren R Walpole (Dept. of Civil Engineering, University of Canterbury).
9. *The Seismic Behaviour of Small Reinforced Concrete Beam-Column Knee Joints* by L M Megget (Dept. of Civil and Resource Engineering, University of Auckland).
10. *The 1855 Wairarapa, New Zealand Earthquake- Analysis of Historical Data* by R Grapes (Victoria University) and G Downes (IGNS).
11. *Whitemans Valley Fault and the Earthquake-Generating Potential of Wellington's Second Order Faults* by J G Begg and R J Van Dissen (IGNS).
12. *The 1934 Pahiatua Earthquake Sequence: Analysis of Observational and Instrumental Data* by Gaye Downes, David Dowrick, Kelvin Berryman (IGNS) and Euan Smith (Victoria University).

These reports have been deposited in New Zealand university and other selected libraries and they can also be obtained from the Commission. A full list of projects completed under the EQC grants scheme is on the Internet at the EQC's web page: http://www.eqc.govt.nz.

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**WORLD EARTHQUAKES OF MAGNITUDE 6.0 AND GREATER**
**November 1998 to December 1998.**

Data from the U.S. National Earthquake Information Service.

| Date | Lat. | Long. | Depth (km) | Mag. | |
|---|---|---|---|---|---|
| Nov 08 | 8.79S | 121.39E | 33 | 6.4 | **Flores region, Indonesia.** Felt on Flores. Also felt on Sumba. |
| Nov 09 | 7.01S | 128.98E | 33 | 6.7 | **Banda Sea.** |
| Nov 09 | 6.89S | 128.98E | 33 | 7.0 | **Banda Sea.** Felt strongly on Ambon. Also felt strongly at Darwin, Australia. |
| Nov 14 | 14.9S | 167.3E | 119 | 6.0 | **Vanuatu Islands.** |
| Nov 15 | 21.5S | 176.5W | 149 | 6.3 | **Fiji Islands region.** |
| Nov 18 | 3.35S | 130.7E | 33 | 6.1 | **Seram, Indonesia.** |
| Nov 19 | 22.6N | 125.8E | 33 | 6.4 | **Southeast of Taiwan.** Felt (II JMA) on Iriomote-shima and Ishigaki-shima; (I JMA) on Kume-shima Miyako-shima and Yonaguni. |
| Nov 24 | 16.5S | 174.8W | 223 | 6.0 | **Tonga Islands.** |
| Nov 25 | 7.79S | 158.6E | 47 | 6.2 | **Solomon Islands.** |

| | | | | | |
|---|---|---|---|---|---|
| Nov 29 | 2.05S | 124.9E | 33 | 7.7 | **Ceram Sea.** At least 34 people killed on Mangole and 153 people injured on Mangole and Taliabu. Seven people killed, 8 injured and several buildings damaged at Manado, Sulawesi. A timber factory sustained extensive damage and dozens of houses destroyed on Mangole. Landslides blocked a highway on Mangole. Felt (VI) at Luwuk and (I) at Palu, Sulawesi. Also felt (IV) on Ternate and (III) on Ambon. |
| Dec 06 | 1.30N | 126.25E | 33 | 6.6 | **Northern Molucca Sea.** Felt (V) at Bitung and Tonado and (IV) at Manado, Sulawesi. Also felt (III) at Galela, Halmahera and on Ternate. |
| Dec 16 | 31.5N | 131.26E | 42 | 6.0 | **Kyushu, Japan.** Felt (IV JMA) at Kanoya and Nango. Felt (III JMA) in northern Kagoshima and southern Miyazaki; (II JMA) in parts of Kumamoto and Oita Prefectures. Felt in much of Kyushu. Also felt (I JMA) in western Ehime Prefecture, Shikoku. |
| Dec 16 | 1.18N | 126.16E | 33 | 6.2 | **Northern Molucca Sea.** Felt (IV) at Bitung, Manado and Tondano, Sulawesi. Also felt (III) on Ternate. |
| Dec 26 | 1.34S | 123.67E | 33 | 6.0 | **Sulawesi, Indonesia.** |
| Dec 27 | 21.5S | 176.41W | 144 | 6.8 | **Fiji Islands region.** |

## SIGNIFICANT NEW ZEALAND EARTHQUAKES November 1998 to December 1998.

The locations of these earthquakes are preliminary as final analyses have not been completed.

| Date | Lat. | Long. | Depth (km) | Mag. | |
|---|---|---|---|---|---|
| Nov 18 | 39.19S | 174.68E | 12 | 4.0 | **42km east of Inglewood** Felt in Whangamomona. |
| Dec 21 | 40.48S | 174.80E | 79 | 4.4 | **43km west-north-west of Levin** Felt from Wanganui to Wellington. |
| Dec 29 | 38.18S | 176.25E | 174 | 5.7 | **5km south-south-east of Rotorua** Felt strongly in Opotiki, and also felt in Taupo, Marton, Waipawa and Wellington. |