

TSUNAMI

Linking Insurance and Science

World Earthquake Activity Database (WEAD)

The main output of the WEAD project is a datafile which represents an interpretation of world seismicity, in which raw earthquake epicentral data is converted into meaningful statistics for a large number of towns and cities (approximately 1,100). The analysis for each place is performed on the basis of earthquakes within 200 km. In order to ensure that the computed statistics are not invalidated by different levels of completeness in the earthquake catalogues, earthquake data are accepted for analysis only when they meet the magnitude/date criteria in Table 1.

<i>Earthquakes since ...</i>	<i>Above magnitude ...</i>
1900	7.0
1955	6.0
1964	5.0
1970	4.0

Table 1 - Date/magnitude ranges used in WEAD

For all places, the following data are calculated:

- The number of earthquakes matching the criteria outlined in Table 1.
- The largest earthquake.
- The distance away of this earthquake.
- The estimated intensity this earthquake would have produced at the city.
- The largest estimated intensity from any event (need not be largest; may be the closest).
- The magnitude of the event producing the largest estimated intensity.
- The distance away of the event producing the largest estimated intensity.

For places in relatively low seismicity areas (less than 50 events) no further statistics are calculated. For places with 50 earthquakes or more, the parameters of the magnitude-frequency curve are computed using the maximum likelihood method and from this, two more parameters are calculated:

- The return period of a magnitude 6 Ms earthquake.
- The magnitude of the earthquake that has a return period of 100 years.

In addition, some general information about each place is kept:

- The name of the city.
- The country that it is in.
- Whether it is a capital or not.
- Its latitude and longitude.