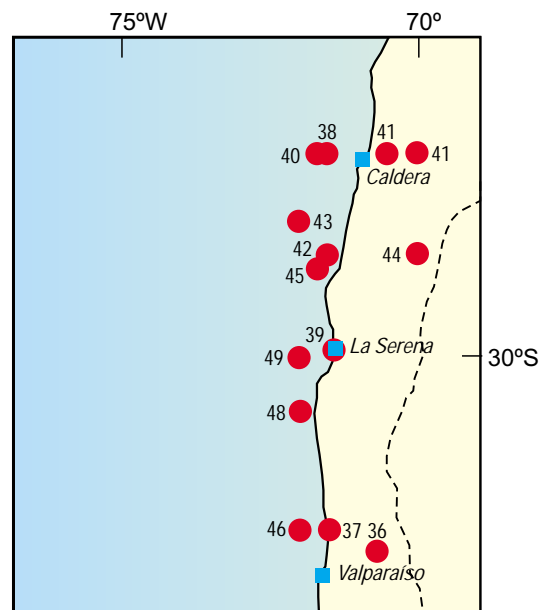


5.2.2 NORTH CENTRAL CHILE (27°S - 33°S)

This region is characterized by a shallow dipping seismic zone and by a lack of volcanism. Destructive tsunamis this century have occurred in this area at a rate of about one event every 20 years.

The 1922 and 1943 events, both of magnitude 8.3, demonstrate that this region has a potential for destructive earthquakes. Both the 1955 and 1971 earthquakes did not have large magnitudes, when compared to magnitudes of other earthquakes that generated damaging tsunamis, yet both produced locally damaging tsunamis. The 1730 and 1922 events generated tsunamis that were damaging as far away as Japan, indicating that Japan may be vulnerable to future tsunamis generated in this area of Chile.



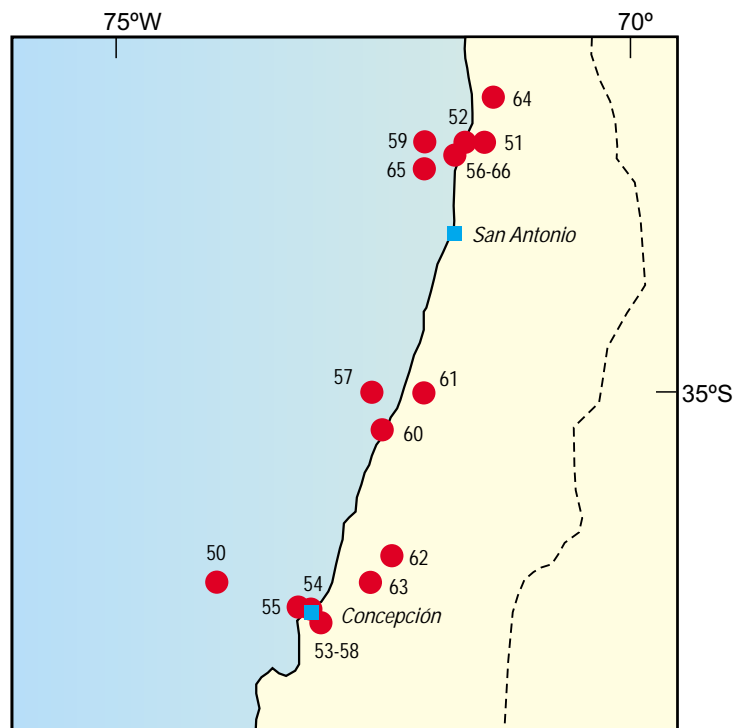
Earthquake's location in north-central Chile

SEISMIC HISTORY OF NORTH-CENTRAL CHILE (27°S - 33°S)							
Event Nr.	Year	Date Mo	Day	Lat. °S	Long. °W	Magnitud	Effects
36	1687	07	12	32,8	70,7	7,3	
37	1730	07	08	32,5	71,5	8,7	Great Tsunami
38	1819	04	11	27,0	71,5	8,5	Big Tsunami
39	1849	12	17	29,9	71,4	7,5	Big Tsunami
40	1851	05	26	27,0	71,6	7,2	Tsunami
41	1859	10	05	27,0	70,0	7,7	Big Tsunami
42	1918	05	20	28,5	71,5	7,9	
43	1922	11	07	28,0	72,0	7,0	
44	1922	11	11	28,5	70,0	8,3	Great Tsunami
45	1923	05	04	28,7	71,7	7,0	
46	1931	03	18	32,5	72,0	7,1	
47	1939	04	18	27,0	70,5	7,4	
48	1943	04	06	30,8	72,0	8,3	Small Tsunami
49	1955	04	19	30,0	72,0	7,1	Small Tsunami

5.2.3 CENTRAL CHILE (33°S - 37°S)

Central Chile can be divided in three regions, as shown in the diagram.

- a) The region near Valparaiso (33°-34°S) is marked by the intersection of the Juan Fernandez Ridge with the Peru-Chile Trench, and the abrupt appearance of volcanism to the south. Five tsunamigenic earthquakes have occurred in this area: November 19, 1811; November 19, 1822; October 16, 1868; August 17, 1906 and March 3, 1985. The Nov. 19, 1822, and Aug. 17, 1906, earthquakes were centered almost at the same location. Both had magnitudes of 8.5 or larger and both caused damage.
- b) South of Valparaiso (34°S-36°S), a moderate-size seismic gap exists, where the potential for future earthquakes is good. Four events having magnitudes of 7.5 or larger have occurred in this area, but none of these generated a destructive tsunami.
- c) Concepcion Region (36°S-37°S). In the southern part of Central Chile there were two events in 1835 and 1939 with magnitudes higher than 8.0; the first one generated a destructive tsunami. Lower magnitude events occurred in 1751, 1868, 1878, 1953, and 1971.



Earthquake's location in central Chile.

SEISMIC HISTORY OF CENTRAL CHILE (33°S -37°S)							
Event Nr.	Year	Date Mo	Day	Lat. °S	Long. °W	Magnitud	Effects
50	1751	05	25	36,5	74,0	8,0	Tsunami
51	1811	11	19	33,0	71,4		Small Tsunami
52	1822	11	19	33,0	71,6	8,5	Great Tsunami
53	1835	02	20	36,8	73,0	8,2	Great Tsunami
54	1838	05	07	36,7	73,3		Small Tsunami
55	1868	09	14	36,7	73,2		Small Tsunami
56	1868	10	16	33,1	71,7		Small Tsunami
57	1871	03	25	35,0	72,5	7,5	Small Tsunami
58	1878	02	14	36,8	73,0		Small Tsunami
59	1906	08	17	33,0	72,0	8,6	Great Tsunami
60	1923	02	17	35,3	72,4		Small Tsunami
61	1928	12	01	35,0	72,0	8,4	Tsunami
62	1939	01	25	36,3	72,3	8,3	
63	1953	05	06	36,5	72,5	7,6	
64	1971	07	07	32,5	71,2	7,5	
65	1975	05	10	35,7	74,6	7,8	
66	1985	03	03	33,2	72,0	7,8	Small Tsunami

DO YOU KNOW ... ?

The May 22, 1960, earthquake in Southern Chile generated a tsunami that spread out through the entire Pacific Ocean, producing damage in places so far away as Japan, Hawaii and Colombia. There were also deaths in Japan and Hawaii. In this last place the damages were estimated to be \$ 75 million (US).

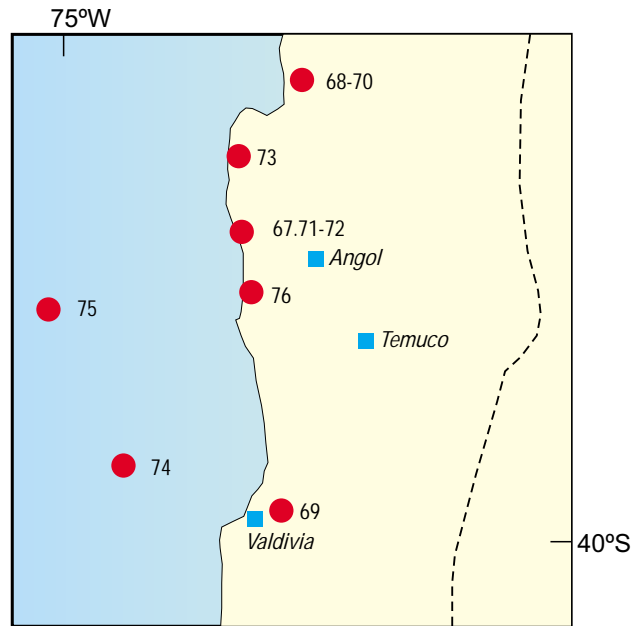
5.2.4 SOUTH CENTRAL CHILE (37°S. -41°S.)

This zone is characterized by a shift of major seismic activity to an offshore structure near the northern boundary of this region, as seen in the diagram.

Large earthquakes occurred in this region on October 28, 1562; February 8, 1570; December 16, 1575, March 15, 1657, and May 22, 1960. The 1562, 1570, 1575, and 1960 earthquakes produced destructive tsunamis.

Intervals between the destructive earthquakes of 1575, 1737 (South Chile), 1837 (South Chile), and 1960 (Valdivia area, 40° S. latitude) appear to be larger than those of both the Concepcion and the Valparaiso areas (that is, more than 100 years).

The May 22, 1960, earthquake was the largest seismic event in this region since 1570.



Earthquake's location in South-Central Chile.

SEISMIC HISTORY OF SOUTH-CENTRAL CHILE (37°S - 41°S)							
Event Nr.	Year	Date Mo	Day	Lat. °S	Long. °W	Magnitud	Effects
67	1562	10	28	38,0	73,5	8,0	Great Tsunami
68	1570	02	08	37,0	73,0	8,5	Great Tsunami
69	1575	12	16	39,8	73,2	8,5	Great Tsunami
70	1657	03	15	37,0	73,0	8,0	Great Tsunami
71	1920	08	20	38,0	73,5	7,0	Small Tsunami
72	1949	04	20	38,0	73,5	7,3	
73	1960	05	21	37,5	73,5	7,3	Small Tsunami
74	1960	05	22	39,5	74,5	8,9	Great Tsunami
75	1960	11	01	38,5	75,1	7,4	
76	1974	08	20	38,4	73,4	7,0	