

TABLE 3-2: SELECTED SIGNIFICANT EARTHQUAKES - OTHER THAN CALIFORNIA <sup>1</sup>			
DATE	LOCATION	MAGNITUDE	COMMENTS
1556	Shansi, China	8	830,000 killed, most destructive earthquake on record
1755	Lisbon, Portugal	8.7	Earthquake, tsunami, and fire killed one-quarter of Lisbon's population
1811-12	New Madrid, Missouri	8.1, 7.8, 8.0	Three principal earthquakes changed course of Mississippi River; felt in Boston.
1886	Charleston, South Carolina	7.3	Greatest historical quake in eastern U.S., 90% of buildings damaged; 60 killed; felt in Boston, Chicago, St. Louis.
1949	Puget Sound, Washington	7.1	\$25 million damage, 8 killed
1959	Hebgen Lake, Montana	7.3	Maximum vertical displacement of 21 feet; landslide dammed river, 28 killed.
1960's	Rocky Mountain Arsenal, Denver, Colorado	4.3	Over 700 earthquakes due to waste-water injection into deep wells
1964	Prince William Sound, Alaska (Good Friday Earthquake)	9.2	Damaging tsunami at Crescent City, CA, 131 killed, shorelines rose 33 feet; submarine slides, extensive damage to moderately tall buildings and to poorly constructed low buildings
1976	Guatemala	7.5	200-km rupture on Motagua fault; 22,000 deaths
1976	Tangshan, China	7.5	Not predicted; officially about 250,000 deaths although may be as high as 655,000
1985	Michoacan, affecting Mexico City	8.0	Over \$3 billion damage; 30,000 injured; 9500 deaths, 412 buildings collapsed
1988	Spitak, Armenia	7.0	25,000 deaths, 13,000 injured, 500,000 homeless
1990	Caspian Sea region, Iran	7.7	Above 40,000 deaths, surface faulting, extensive landslides.
1995	Kobe, Japan	6.8	Over 6000 people killed, \$300 billion damage.
2004	Sumatra	9.1	Earthquake and tsunami killed nearly 300,000.

REFERENCE: U.S. Geological Survey website:  
<http://earthquake.usgs.gov/regional/world/historical.php>

<sup>1</sup> Bolt, 1993, pp. 269 - 273; Evans, 1966; Satake et al., 1996; Stover and Coffman, 1993; USGS, 1999.

TABLE 3-3: SELECTED CALIFORNIA EARTHQUAKES AND THEIR IMPORTANCE

DATE	FAULT NAME	LOCATION	MAGNITUDE	IMPORTANCE
1700	Cascadia Subduction Zone	Between Cape Mendocino and British Columbia	9.0	Caused tsunami damage to Japan and west coast of U.S.; Evidence from tsunamis, dendrochronology, C <sup>14</sup> dating and paleoseismicity.
1800	?	San Diego and San Juan Capistrano area	6.3	Damaged missions in San Diego and San Juan Capistrano
1812	San Andreas	Wrightwood	7.3	Used dendrochronology to determine location on the San Andreas fault, 40 dead at San Juan Capistrano
1836		San Juan Bautista	6.4	Older reports placed this quake on the northern Hayward fault
1838	San Andreas	San Francisco to San Juan Bautista	7.4?	Damage to San Francisco and Santa Clara
1857	San Andreas	Tejon Pass / NW Los Angeles County	7.9	Damage from Monterey to San Bernardino County, 1 dead, at Pallett Creek, 12 quakes in 1700 years
1865	San Andreas	Santa Cruz Mountains	6.5	\$ ½ Million property damage
1868	Hayward	southern Hayward fault	7.0	30 dead, \$350K in property damage
1872	Owens Valley	Lone Pine / Owens Valley	7.4	27 dead, \$250K property damage, John Muir recorded his observations in Yosemite, felt over a large area - Shasta to San Diego, Nevada, Arizona, Utah, slightly felt in San Francisco
1892	?	Vacaville	6.6	1 dead, \$225K property damage
1906	San Andreas		7.8	3000 dead, \$524 Million property damage from quake and fire, led to Reid's Elastic Rebound Theory
1925		Santa Barbara	6.8	13 killed, numerous buildings in central building district destroyed. Santa Barbara was the first California municipality to require earthquake-resistant construction. Afterwards, the Uniform Building Code was developed and adopted by the city.

1933	Newport-Inglewood	Long Beach	6.4	Occurred at 6 p.m., heavily damaged school buildings, led to the first statewide earthquake regulations - the Field Act and Riley Act, improved building codes, refined Richter magnitude scale published in 1935, and strong-motion instrumentation program
1940	Imperial	El Centro	7.0	9 dead, first instrumental strong-motion measurement
1952	White Wolf	Arvin-Tehachapi (Kern County)	7.3	12 dead, mapped by the oil companies as a large basement step but not thought to be active, left lateral thrust motion
1966	San Andreas	Parkfield	5.6	Until 2004, the last moderate California earthquake on the central San Andreas fault, led to the Parkfield Experiment and EarthScope's San Andreas Fault Observatory at Depth
1971	San Fernando	San Fernando Valley	6.6	65 dead, over 2000 injured, over \$500 Million losses, led to Alquist-Priolo Earthquake Fault Zoning Act (AP), Seismic Safety General Plan element, Hospital Seismic Safety Act, State Capitol seismic evaluation
1983 1987	"Coalinga Nose" Elysian Park	Coalinga Whittier Narrows	6.4 6.0	Blind thrusts, earthquake insurance (AB2865, AB1885), funding for strong-motion instrumentation program
1989		Loma Prieta	6.9	63 dead, 3757 injured, Seismic Hazards Mapping Act, \$6 Billion property losses
1992	Johnson Valley, Homestead Valley, Emerson, Camp Rock	Landers (Mojave Desert)	7.3	1 dead, triggered movement on 10 or more faults
1994	blind thrust	Northridge	6.7	57 dead, over 9000 injured, \$40 Billion property damage, led to seismic upgrades to 1997 Uniform Building Code

REFERENCE: 2006 California Geological Survey website, Significant California Earthquakes, [http://www.consrv.ca.gov/CGS/rghm/quakes/eq\\_chron.htm](http://www.consrv.ca.gov/CGS/rghm/quakes/eq_chron.htm)