

### INVENTORY 6(GENERAL)

NO.	AUTHOR	YEAR	TITLE
1	Report for the Emergency Consultative Group Meeting for Central America	1998	Reconstruction Program
2		1994	Desastres,Planificacion y Desarrollo: Manejo de Peligros Naturales para Reducir los Daños en Guatemala
3	RED CROSS	1998	World disaster report 1998 edition(in Jananese)
4	INTERNET		The cost of natural disasters in Guatemala
5	INTERNET		Meteorological data
6	INTERNET		Landslide data
7	INTERNET		Flood data
8	INTERNET		The most deadly 100 natural disasters of the 20th
10	INTERNET		Historic volcanic eruption in Oceania
11	Organization of American States	1984	Programa de Evaluación de Riesgos naturales (natural hazards program evaluation).
12	SEGEPLAN		Programa de Reconstrucción
13	CONRED/CEPREDENA C		Perfil del Proyecto: Reducción del Riesgo Asociado a Desastres Naturales en Asentamientos del area Metropolitana de Guatemala
14	Luis Fauqué/Pedro Tax		Informe Premiminar: Fotointerpretación Parcial y Conclusiones Iniciales
15	Report for the Emergency Consultative Group Meeting for	1998	Reconstruction Program
16		1994	Desastres,Planificacion y Desarrollo: Manejo de Peligros Naturales para Reducir los Daños en Guatemala
17	Asociación Guatemalteca de Ingeniería Estructura y Sísmica (AGIES)	1996	Normas Estructurales de Diseño y Construcción Recomendadas para la República de Guatemala
18	INSIVUMEH	2003	Documents and data for the seminar 2003

### INVENTORY 7(MAPS)

NO.	AUTHER	YEAR	TITLE	SHEETS
1	INSIVUMEH W.I.Rose	1986	1)PHOTO INTERPRETATION OF TAKANA VOLCANO 2)PRELIMINARY MAP OF ZONES OF POTENTIAL HAZARD FROM LAVA FLOWS AND ASHCLOUD DEPOSITS FROM FUTURE ERUPTIONS OF TACANA VOLVANO 3)PRELIMINARY MAP OF AREAS OF POTENTIAL HAZARD FROM FUTURE PYROCLASTIC FLOWS, MUDFLOWS AND FLOODS, AND LATERAL BLASTS AT TACANA VOLVANO. GUATEMALA	3
2	INSIVUMEH W.I.Rose, R.Mercado O.Matías, J.Girón	1988	1)PRELIMINARY ASHFALL HAZARD MAP FOR SANTIAGUITO DOME, GUATEMALA 2)PRELIMINARY VOLCANIC HAZARDS MAP FOR SANTIAGUITO DOME, GUATEMALA	2
3	F.M.Cornway W.I.Rose, J.Vallance O.Matias,CEPREDE NAC	1992?	1)AREAS OF POTENTIAL HAZARDS FROM LAVA FLOWS, PYROCLASTIC FLOWS, AND ASSOCIATED ASH CLOUDS AT CERRO QUEMADO, GUATEMALA 2)AREAS OF POTENTIAL HAZARDS FROM LATERAL BLASTS, DEBRIS AVALANCHES AND DEBRIS FLOWS, AND TEPHRA FALL AT CERRO QUEMADO, GUATEMALA	2
4	INSIVUMEH N.G.Banks	?	1)MAPA QUE MUESTRA LAS AREAS DE RIESGO DE AVALANCHAS DE DEBRIS Y COLAPSO DEL VOLCAN DE PACAYA 2)MAPA QUE MUESTRA LAS AREAS DE RIESGO DE BASE SURGE Y OTROS FLUJOS PIROCLASTICOS DEL VOLCAN DE PACAYA 3)MAPA QUE MUESTRA LAS AREAS DE RIESGO DE FLUJOS DE LAVA DEL VOLCAN DE PACAYA 4)MAPA QUE MUESTRA LAS AREAS DE RIESGO DE FLUJOS DE LODO DEL VOLCAN DE PACAYA 5)MAPA QUE MUESTRA LAS AREAS DE	5
5	O.Matías		MAPA DE ISOPACAS ERUPCIÓN DEL 20 DE MAYO DE 1998 VOLCÁN DE PACAYA	1
6	IGN	1991	Geological map GUATEMALA(1/50,000)	1
7	IGN	1984	Geological map ESCUINTLA(1/50,000)	1
8	IGN	1991	Geological map GUATEMALA(1/250,000)	1
9	IGN	1964	Geological map QUEZALTENANGO(1/250,000)	1
10	IGN	1981	Geological map SAN JUAN	1
11	IGN		Geological map SAN PEDRO AYAMPUC	1
12	IGN	1977	Geological map CHIMALTENANGO(1/50,000)	1
13	IGN	1991	Geological map GUATEMALA(1/50,000)	1
14	IGN	1975	Geological map SAN JOSE PINULA(1/50,000)	1
15	IGN	1983	Geological map ALOTENANGO(1/50,000)	1

### INVENTORY 7(MAPS)

NO.	AUTHER	YEAR	TITLE	SHEETS
16	IGN	1980	Geological map NUEVA SANTA ROSA(1/50,000)	1
17	IGN	1984	Geological map ESCUINTLA(1/50,000)	1
18	IGN	1980	Geological map CUILAPA(1/50,000)	1
19	IGN	1969	Geological map AMATITLAN(1/50,000)	1
20	IGN		Geological map LA DEMOCRACIA(1/50,000)	1
21	IGN	1976	Geological map TODOS SANTO CUCHUMATAN(	1
22	IGN	1968	Geological map CUILCO(1/50,000)	1
23	IGN	1972	Geological map SAN SEBASTIAN HUEHUETENANGO(1/50 000)	1
24	IGN	1968	Geological map CHIANTLA(1/50,000)	1
25	IGN	1975	Geological map NEBAJ(1/50,000)	1
26	IGN	1972	Geological map SANTA BARBARA(1/50,000)	1
27	IGN	1981	Geological map HUEHUETENANGO(1/50,000)	1
28	INSIVUMEH		GEOLOGIA GENERAL (1/50,000)	1
29	INSIVUMEH		ESTUDIO DE AGUAS SUBTERRANEAS EN GUATEMALA CUENCAS DEL VALLE GUATEMALA	22
30	INSIVUMEH	1999	Mapa de Amenaza de Inundacion (registro histórico de inundaciones en el país)	100+
32	INSIVUMEH		INFORME FINAL ASTUDIO DE AGUAS SUBTERRANEAS EN EL VALLE DE QUETZALTENANGO	19

### INVENTORY 8(BOOKS)

NO.	AUTHOR	YEAR	TITLE	Pages
1	Teodor J. Blachut		A Dynamic Land Information System Based on a Multipurpose Cadastre	85
2	Roger Marois et al.	1997	Multilingual Dictionary of Lithic Technology Terms	77
3	Leopoldo Zea and Mario Magallon	1999	Geopolítica de América Latina y el Caribe	225
4	Leopoldo Zea and Mario Magallon	1999	Latinoamerica Economica y Politica	198
5	Instituto Panamericano de Geographia e Historia	1986	Glossary of Cartographic and Photogrammetric Terms	374
6	Instituto Geographico Nacional de Honduras	1999	Diccionario Geographico de America Central	248
7	J. G. Tanner and John B. Shepherd	1997	Seismic Hazard in Latin America and the Caribbean: Vol.1 Project Catalogue and Seismic Hazard Maps	143
8	R. Zuniga et al.	1997	Seismic Hazard in Latin America and the Caribbean:Capitulo 2 Mexico	82
9	Walter P. Montero et al.	1997	Seismic Hazard in Latin America and the Caribbean: Capitulo 3 America Central	79
10		1997	Seismic Hazard in Latin America and the Caribbean:Capitulo 4 America del Sur	167
11	J. B. Shepherd et al.	1997	Seismic Hazard in Latin America and the Caribbean:Vol. 5 Seismic Hazard Maps for the Caribbean	15
12	Giovanni H. Peraldo and Walter P. Montero	1999	Sismologia Historica de America Central	347
13		1989	Research Guide of Guatemala	147
14	Report for the Emergency Consultative Group Meeting for Central America	1998	Reconstruction Program	46
15		1994	Desastres,Planificacion y Desarrollo: Manejo de Peligros Naturales para Reducir los Daños en Guatemala	

### INVENTORY 9(CD-ROM)

NO.	AUTHER	YEAR	TITLE	ABSTRACT
1	INSTITUTO NACIONAL DE ESTADISTICA		PROYECCIONES DE POBLACION 1995-2000	
2	INSTITUTO NACIONAL DE ESTADISTICA		ATLAS CONOZCAMOS GUATEMALA	
3	INSTITUTO NACIONAL DE ESTADISTICA		POBLACION Y VIVIENDA A NIVEL DE LUGAR POBLADO	Result of sensus in 1994
5			ArcView Data	1.Mapas Climáticos 2.Mapa de Riesgo -Sísmico -Volcánico -Deslizamientos -Inundaciones
6	Organización Panamericana de la Salud		Biblioteca Virtual de Desastres	La colección de publicaciones sobre emergencias y desastres en HTML y PDF
7	Organización Panamericana de la Salud	2000	Mitigación de desastres en instalaciones de salud	2 publicaciones "Lecciones Aprendidas en América Latina sobre Mitigación de Desastres en Instalaciones de la Salud" y "Mitigación de Desastres en Instalaciones de la Salud"
8	MAGA (Ministerio de Agricultura, Ganadería y Alimentación)	2001	Programa de Emergencia por Desastres Naturales	Mapas digitales a escala 1:250,000, elaborados por el Sistema de Información Geográfica (SIG-MAGA). Contiene: Base cartográfica nacional, temas biofísicos, sociales y vinculados a desastres naturales
9	AMSA (Autoridad para el Manejo Sustentable de la Cuenca y el Lago de Amatitlán)	2001	Zonas de riesgo en la Cuenca y del Lago de Amatitlán causas, efectos y soluciones	Los problemas en la Cuenca y el Lago de Amatitlán. Medidas tomadas para los problemas
11	DGC (Dirección General de Camino?)		Mitch	Maps showing location of slope failure and bridges in danger, Power point file that shows disaster of Hurricane Mitch and countermeasures taken after the disaster
12	Center for Integration of Natural Disaster Information, CINDI	1999	Digital Atlas of Central America Prepared in Response to Hurricane Mitch Version 2 two CD set	Viewer that shows Course of Mitch, Damage, Precipitation record, Cloud image, Satellite Image before and after Mitch, etc.
13	Municipalidad de Ciudad de Guatemala		Curvas de Nivel	Digital data of contour line

# RIO ACHIGUATE

DATE	CAUSE	PRECIPITATION RECORD	INUNDATION AREA	DAMAGE ETC...
1906/10/10	Rains		Pastores-Sacatepequez	The road to Pastores in Sacatepequez is cut off.
15/10/1923			Costa South, the roads	The roads, the railroads, and telegraphs were cut off.
9/1929	Storm		Esc. Antigua-Chimaltenango-Esc Ciudad Vieja, Sacatepequez	Flood extending from Capetillo between Escuintla and Antigua. The following parts of the roads were affected. Sep, 14, 15 y 16. Affected the following 4 bridges, above Guacalate River. Located in: Chimaltenango-Parramos Escuintla-Antigua Ranch. Mirandilla * Pensativo River
24/9/1929	Rains		Antigua Guatemala, At the Guacalate length.	Affected Roads, Antigua among others. Problems on the roads.
14/7/1931	Storm		Sta. Catarina Barahona San Antonio Aguas Calientes.	In Sacatepequez, inundation and material damages.
27/7/1931	Storm		Río Guacalate	Flood rise, slope collapse, Guacalate overflow.
30/8/1932	Rains		from Antigua to Escuintla de Antigua a Esc.	Damage in the roads due to rains.
22/9/1932	Rains		Pastores-Sacatepequez	Guacalate River overflow above Pastores.
18/9/1933	Storm		Río Pensativo	A storm causes damages in Sacatepequez.
8-24/9/1933	Storm		Pastores-Sacatepequez Antigua Masagua Pavón Guatemala. Pastores-Sacatepequez Antigua Antigua y Jocotenango Chimaltenango, Mazate,	Affected parts of roads: Alotenango-Ciudad Vieja. Guatemala-Antigua. Antigua-Chimaltenango. San José-Iztapa. Ciudad Vieja-Dueñas. Palín-Chimaltenango. San Lorenzo-Ciudad Vieja. Affected bridges, over Colorado River. Bridge over Achiguatate river. Affected railroads caused by a washing. Esc.- San José. 4 deaths. Inundated town. As consequence of Portales river. Inundation caused by Pensativo. Inundation caused by Guacalate river. Pensativo river Inundated.. Inundation by Guacalate river. Swift flow of Cerro Filadelfia Inundated by Pensativo. 12 houses were destroyed due to the heavy rains and the overflow of Guacalate
22/9/1933			Guacalate y Masagua	Guacalate overflowed inundating Masagua district

# RIO ACHIGUATE

DATE	CAUSE	PRECIPITATION RECORD	INUNDATION AREA	DAMAGE ETC...
29/9/1933	Rains		Antigua Guatemala	The currents from Filadelfia hills came down to the city.
1933/9/10	Rains		Antigua Guatemala	Antigua inundated due to the currents of Pensativo river.
1949/1/9	Rains		Chipilapa town	Overflow of Pensativo over Chipilapa town.
17/10/1949			South cost stream and Escuintla	The south cost stream damaged. Inundation in Escuintla.
10/1949	Storm		Antigua-Sac. Ranch La Chacra, Sac.	The following roads were affected: Esc.-Masagua y Masagua-P. S. José. 4 bridges were affected: 2 over Pensativo, one over Michatoya and the other over Ramal San José Port. Guacalate river damages 2 electrical plants. At San José Port the water raises to 3 m. Pensativo river deposits sand in Antigua. The Guacalate rises and brings back the sewage, and inundating Antigua.
28/9/1950	Rains		Antigua Guatemala	Inundation due to Pensativo river hazard SOS to Antigua.
1951/8/9	Rains		Antigua Guatemala	Dangerous overflow of Pensativo river destroying an iron bridge.
20/9/1951	Rains		Pensativo	The cause overflowed over the streets.
1953/9/10	Local heavy rain		Pila de Rubio-Antigua?	Pensativo overflows, the streets are washout by the current.
1959/12/6	Local heavy rain		Km 98 to the Pacific	Problems on the roads. Slope collapses over the road.
1969/5/9	Hurricane Francella		Escuintla	Thousands of evacuees, slope collapses over the roads, many deaths, damages to agriculture and cattle.
1969/8/9	Hurricane Francella		Guacalate	Road and electrical disasters, destroyed bridge, the roads totally cut off, number of deaths incalculable.
1969/8/9	Copious rains		Population of Masagua	This town was affected due to the rains.
1969/9/9			La Democracia	Big danger, 71 deaths. In la Democracia bridges over Colorado and Obispo rivers.
4-10/9/1969	Hurricane Francella		Alotenango	14 damage houses due to hurricane. Guacalate and Achiguate rivers caused many damages.
27/7/1970	Rains		Siquinalá	Telegraph and telephones were cut of, the currents destroyed the fillers of Ceniza bridge in Siquinalá.
29/7/1970			Km 90 y 95	Achiguate river waters overflowed cutting off the 90 and 95 kms in the road to Escuintla and San Jose Port.
30/7/1970	Rains		Guacalate	Damages to the south cost at the 62 km in the pacific near Guacalate river. As well in the 73 km in the Achiguate river overflowed over bailey bridge.
1970/9/9	Rains		Escuintla	4 deaths, destroyed bridges, damage houses due to the rain.
1970/9/9	Rains		Sacatepequez	4 deaths, destroyed bridges and damage houses.
1971/9/9	Rains		Km 96 and 100	Serious road damages, the river and its branches effluents se overflow.

## RIO ACHIGUATE

DATE	CAUSE	PRECIPITATION RECORD	INUNDATION AREA	DAMAGE ETC...
25/9/1971	V. Fuego Eruption		Siquinalá	Due to the volcanic eruption many rivers overflowed. The bridge over Pantaleón river fall down. Siquinalá is evacuated.
15/10/1971	Rains	18.0mm(C)	Masagua, Siquinalá	1 dead, injured people, destruction, Guacalate and Achiguate rivers are over flowed in Masagua. Sinking of in Km 80 Interamericana High Way. Obispo river overflowed in Siquinalá.
1972/3/8	Rains	0.0mm (C)	La Democracia	Mazate river is overflowed penetrating to houses and lands.
1972/10/10	Rains	0.0mm (C)	La Democracia	Mazate river is overflowed and La Democracia is inundated, devastating the crops.
21/8/1973	Rains	0.0mm (C)	La Democracia	Obispo river is overflowed due to a landslide.
1975/9/9	Rains	220.0mm (P)	San José Port	San José Port when the Achiguate and Guacalate rivers overflowed. Cerillos neighborhood completely flooded.
1975/11/9	Heavy Rains	1.0mm (P)	South Cost	Overflows and destruction, dangerous situation. The traffic road was cut off at Km 78 to 100 due to Achiguate overflow.
1976/1/7	Rains	0.0mm (P)	Km 79, 79, 93 and 94	Damage to agriculture. Achiguate river is overflowed at the San José Port road.
14/7/1977	Rains	0.0mm (E)	Escuintla	The rains damage corn crops in Escuintla, around 40,000 quintals of corn lost, one meter of depth.
1978/12/9	Rains	15.2mm (C)	Siquinalá	South Cost traffic road cut off, the river overflowed, the rivers were overflowed in Siquinalá
1980/10/7	Heavy Rains	6.0mm (S)	Jocotenango-Sacatepequez.	Damages to Xaya-Pixcaya aqueduct, near Jocotenango.
22/8/1981	Rains	21.0mm (S)	Antigua and Chipilapa	Antigua inundated due to Pensativo river, damages in Chipilapa access to the city, thousands in loss, houses flooded with mud and sand.
15/6/1982	Rains	73.0mm (T)		Overflow of Achiguate and Coyolate river in Escuintla material damages, agriculture and housing.
1983/12/9	Local heavy rain	20.0mm (T)		1 dead of Achiguate river.
19/9/1983	Rains	91.2mm (C)	La Democracia	40 families affected, El Pijar village.
1983/8/10	Rains	5.0mm (C)	Coyolate and Guacalate rivers.	19 parcels and 200 blocks of crops damaged.
16/6/1984	Rains	1.8mm (P)	Varsovia Ranch	Due to the river overflowed.
1984/8/7	Rains	6.6mm (E)	Escuintla	Inundation due to the overflow of Achiguate river.
1984/5/8	Rains		Antigua	Inundation of Pensativo river.
26/9/1984	Rains	31.2mm (C)	Masagua	The river overflowed affecting the road.



# RIO ACHIGUATE

DATE	CAUSE	PRECIPITATION RECORD	INUNDATION AREA	DAMAGE ETC...
27/9/1984	Rains	19.3mm (P)	Km 78 and 80, Antigua	The river overflowed, inundating big extension of land. 15,000 families needing help, the Achiguate river overflowed, inundated housing. The new river is overflowed.
28/9/1984	Rains	15.8mm (E)	Escuintla	Pantaleón is overflowed, causing damages in Escuintla.
1984/1/10	Rains	0.0mm (P)	San José Port	Achiguate and Coyolate river inundated the roads.
1985/4/8	Rains	10.5mm (S)	Antigua	Pensativo is overflowed, the currants got to the Central Park, with 20 inches of mod.
18/9/1985	Rains	30.1mm (S)	Antigua	Pensativo river caused Inundation.
28/9/1985	Rains	44.5mm (C)	Sta. Lucía Cotzumalguapa	
20/5/1986	Rains	68.5mm (S)	Chipilapa	Pensativo overflowed, series damages in Chipilapa street houses with big damages.
21/5/1986	Heavy Rains	9.5mm (S)		The river bed agrades, causing the sediment to wash, destroying a bridge last year.
31/7/1987	Rains	18.3mm (C)	El Pilar	Achiguate river overflow, inundated on the town.
1987/11/9	Rains	0.0mm (P)	La Granja, Versalles, Cuyuta, Corralitos, Tierra linda, etc. Km 81	Achiguate overflowed, inundating houses and towns.
1987/12/9	Rains	2.8mm (P)	San José Port	500 houses were inundated due to the overflow of Achiguate river and the Chiquimulilla channel.
24/9/1987	Rains	0.6mm (P)	Road Esc. To the Port	Achiguate overflows and destroys the road.
1988/9/1	Rains	0.0mm (C)	Los Angeles	Many towns cut of from communication due to the overflow of the river. The overflow of the rivers left Los Angeles, La Democracia isolated from the port.
25/6/1988	Rains	26.0mm (P)	Road to the pacific	Achiguate is overflow
1988/9/8	Rains	33.5mm (P)	Km 92 to 96	Achiguate is overflow, obstructing the vehicle access and inundating many houses.
1988/11/8	Rains	119.0mm (P)	Km 92 to 96	The river is overflow again, causing damages to ranches.
14/8/1988	Rains	13.3mm (P)	San José Port	Thousands in material damages, inundating the main streets.
16/8/1988	Rains	0.8mm (C)	San José Port	The port was inundated 5 days, the most damage neighborhoods: La Barrita Vieja, Potreros and Cerritos.
16/9/1988	Rains	5.5mm (C)	Los Angeles	Achiguate stops the passage to Los Angeles, the river branch was overflowed.
25/9/1988	Rains	17.5mm (C)	El Pilar	The town is cut off of vehicles.

## RIO ACHIGUATE

DATE	CAUSE	PRECIPITATION RECORD	INUNDATION AREA	DAMAGE ETC...
25/10/1988	Miriam Cyclone	91.5mm (S)	C. Interamericana-Cañas	Pensativo is overflowed, the most affected is km 22, 25 Interamericana High Way at Las Cañas slope.
1989/10/7	Rains	0.5mm (S)	Km 87, 90, 91	The river is overflowed those kilometers of the road are inundated.
29/7/1989	Local heavy rain	90.4mm (C)	South cost	Many houses are inundated.
17/8/1989	Rains	9.6mm (S)	Antigua	Pensativo is overflowed again, a big par of Pensativo is overflowed, serious damages to the houses in the Chipilapa street. Big traffic road congestion.
29/9/1989		11.7mm (C)		Achiguate river broke bulwark and through thousands of water gallons per minute.
1989/10/10	Rains	21.8mm (P)	San José Port	The river is overflowed, causing more Inundation to the port.
1989/11/10	Rains	35.0mm (S)	Antigua	Pensativo overflows again, the third time in 30 days.
13/10/1989	Rains	15.6mm (P)	km 91, 92, 93 y 96	Inundation in the port and in the near by ranches.

puerto San José, (S)Suiza Contenta(San Lucas Sacatepequez), (T)Tiquisate

# RIO ACOMÉ

DATE	CAUSE	RECORD DE PRECIPITACION	AREA DE INUNDACION	DAMAGES, ETC
4-10/9/1969	Francella Hurricane		La Gomera, Pacific Coasts	Acomé is among the rivers that caused most damages, with Coyolate river. Inundation maintain danger at the costs. 71 dead. The bridges at Chipilapa and San Jerónimo rivers were destroyed.
22/9/1978	Storm	72.0mm (C)	Guanagazapa, la Gomera.	These towns were declared on emergency status. The cyclone state has caused many damages to the country, specially in San José Port with overflows in <u>María Linda</u> river, the inhabitants were evacuated.
14/9/1979	Rains	210.0mm (P)	La Gomera.	180 adults and 300 children, were evacuated in the Cerro Colorado town, the town is totally inundated due to the Pantaleón river overflow. (Cuenca Río Coyolate.) ?
28/8/1984	Rains	0.0mm (P)	La Gomera.	Aldea Las Playas, from la Gomera was inundated when the Pantaleón river overflow.

RECORD DE PRECIPITACION (C)Camantulul, (P)Puerto San José

# RIO SAMALA

DATE	CAUSE	PRECIPITATION RECORD	INUNDATION AREA	DAMAGES ETC
26/5/1884	Rains		Small villages near Samalá.	In Retalhuleu. Samalá River grow causing the first problems to small towns of 135 km.
25/8/1885	Rains		Las Delicias Neighborhood, Retalhuleu	Ixpatz River overflow, that neighborhood was among the affected.
9/7/1889	Rains		Aldea San José Las Flores.	Samalá river overflowed at the San José Las Flores village, Retalhuleu.
1916/10/9	Rains		Quetzaltenango	There were earthquakes during 6 hours with heavy rains, some walls came down.
27/9/1919	Storm		West of Xela and San Felipe Retalhuleu	The storm has 10 days and the zone is seriously affected. San Felipe is filled of mod.
18/10/1927	Rains		Cantel, Quetzaltenango	Wind and rain at Cantel, many houses came down.
20/6/1928	Rains		Salcajá	Samalá river is overflowed, the water affected many villages, the current hazard to destroys houses and trees.
9/1929	Storm		San Cristobal, Totonicapán.	The storm affected a bridge.
9/1933	Storm		Retalhuleu. El Palmar	Due to River Bolas. Xequijel river. 10 houses destroyed in Retalhuleu one dead. Electrical and telegraphic lines destroyed.
29/6/1931	Rains		San Cristobal, Salcajá, Olintepeque.	Samalá river overflowed causing damage on those towns.
1933/9/10	Rains??		Salcajá	Samalá river is overflowed, inundating the south of Salcajá.
18/10/1938	Local heavy rains		Quetzaltenango	Some neighborhoods are inundated in Xela.
17/6/1946	Heavy Rains		Almolonga	Downtown of Almolonga was inundated, a river was formed inundating many houses.
1949/10/1	Storm		Santo Domingo Suchi. Quetzaltenango. Ostuncalco. Almolonga. Piedra Seca and Cajola.	3 bridges were affected above the rivers: Samalá and Oc.
18/10/1954	Storm		Salcajá	Salcajá strongly suffered when Samala river flats left by receding water at that town. 32 towns stayed without electrical power due to the damages hydroelectric suffered.

# RIO SAMALA

DATE	CAUSE	PRECIPITATION RECORD	INUNDATION AREA	DAMAGES ETC
30/9/1957	Heavy Rains			Samalá river overflowed causing material damages.
13/6/1958	Hurricane ??		Quetzaltenango	The hurricane cuts any communication in the country, Quetzaltenango with strong winds and overflows of the rivers.
24/6/1959	Rains			San Francisco El Alto y Chiquival, in Quetzaltenango. The roads were interrupted on those places
19/10/1959	Storm		Quetzaltenango *	Landslides and inundation in the department.
1960/6/6	Rains		Quetzaltenango	Danger of the roads, inundation and landslides. Samalá river is overflowed causing damages in housing and agriculture.
1960/8/6	Rains			Samalá river is overflowed again.
16/6/1960	Local heavy rains and small earthquakes		Salcajá and Interamericana road	The phenomena caused serious damages.
23/6/1964	Rains		Barrios of Quetzaltenango	Instituto de Varones de Occidente, damage, almost slips because of the rains. Many Quetzaltenango neighborhoods inundated.
18/8/1969	Hurricane Francella??		Quetzaltenango	Many material damages due to the heavy rains of the weekend, some electrical tower and trees slipped.
25/8/1973	Rains	17.7mm (L)	Quetzaltenango	56 houses were inundated.
23/9/1974	Heavy Rains	10.5mm (L)	Quetzaltenango	Inundated due to the heavy rains, in Suchiate river the International bridge is damage.
1976/2/7	Rains	10.9mm (L)	Quetzaltenango	Problems were causing by the strong currents on the urban area, the streets became rivers. Some places seriously affected, crops and adobe houses.
1978/7/9	Rains	8.4mm (L)		Because of the rains between Sta. Maria de Jesús (Quetzaltenango) and San Felipe (Retalhuleu), there are landslides on the road.
20/9/1978	Tropical Storm Greta	4.0mm (L)	Quetzaltenango	Agricultural damages.
22/9/1979	Rains	18.2mm (L)		The road between Coatepeque and Quetzaltenango is useless due to the landslides.
15/6/1982	Heavy Rains	10.8mm (L)	Quetzaltenango	The rains caused inundation and landslides to the near by roads of San Juan Ostuncalco and Cantel.
28/5/1983	Heavy Rains	25.5mm (L)	Quetzaltenango	Two houses were destroyed.

# RIO SAMALA

DATE	CAUSE	PRECIPITATION RECORD	INUNDATION AREA	DAMAGES ETC
23/6/1983	Rains	0.0mm (L)		The people left because they were afraid that the dams of the Nima I y II river were destroyed, there is a small lake of about two km of length.
1/7/1983	Rains	0.0mm (L)		Samala river hazards Retalhuleu and 13 more communities. Including the department capital which is in danger if the right measures to prevent it are not taken. The volcanic mass that the Samala river carries is a huge hazard for more than 700 families.
1983/2/7	Rains	0.0mm (L)		Samala river has caused damages from El Palmar, affecting agricultural damages to the beach.
22/5/1984	Rains	0.7mm (L)	San Mateo	Inundation are register in this department.
26/5/1984	Rains	14.5mm (L)	Quetzaltenango	The heavy rains caused sinking on the roads mainly in Quetzaltenango, damages were registered on the slip roads of San Juan Ostuncalco, and San Mateo.
1984/3/6	Eruption	0.9mm (A)	El Palmar	500 evacuees due to the eruption of Santiaguito and inundation of Nima I and II
1984/7/6		0.7mm (A)		El río Nima II river was overflow again its currants closed the road for many hours.
1984/12/6		3.0mm (A)	El Palmar	SOS in El Palmar, hazard for eruption and inundation.
1984/1/8	Rains	1.4mm (A)	El Palmar	Emergency in this place the rivers Nima I and II are overflow.
23/8/1984	Rains	0.8mm (A)	Coatepeque	The rains destroyed the potable water system. The road from Quetzaltenango to Retalhuleu has many damages.
24/9/1984	Santiaguito Eruption	3.4mm (R)	El Palmar	The lava and water with mod currant was about 25 m from the Municipal building of El Palmar.
25/9/1984	Rains		San Sebastian	In San Sebastián Retalhuleu there were many damages caused by the overflow of Samala river.
1985/6/6	Santiaguito Eruption	0.0mm (A)	El Palmar	Strong currants entered to El Palmar.
1985/1/6	Eruptions	15.2mm (A)	El Palmar	SOS, El Palmar for disappearing due to the inundation. Due to strong currants coming from Santiaguito and Santa María volcanoes, Nima I and II rivers have divided in two the urban center of El Palmar.

# RIO SAMALA

DATE	CAUSE	PRECIPITATION RECORD	INUNDATION AREA	DAMAGES ETC
1986/12/5		0.0mm (A)		Overflow of the spring river from Cerro Siete Orejas in Quetzaltenango, causing material damages and in agriculture. The material carried by the river blocked Carlin bridge in the 207 in the municipio of La Esperanza.
20/5/1986		38.0mm (L)	Quetzaltenango	Severe inundation were produced in areas of zona 3, as the Callejón del Obrero.
29/6/1986	heavy Rains	9.7mm (L)	Almolonga	The rains caused damages
28/8/1986		0.0mm (A)		Tragedy in El Palmar, houses in cantón de San Pedrito, there were destroyed due to the rains of the rivers Nima I and II, and Tambor.
30/11/1986	Eruption	0.0mm (A)	El Palmar	Santiago Volcano in activity, the rivers Nima I, II and Tambor, grow a lot because of the lava from Santiago.
1987/1/6		0.0mm (A)	El Palmar	Strong currants came down from Santiago breaking huge trees which almost destroyed El Palmar.
1987/12/7	Rains Heavy	5.0mm (A)	El Palmar	The heavy rains caused the loosening of tons of rocks and sand at the south part of Santa Maria volcano, causing damages to agriculture as well Santiago volcano throwing a big quantity of lava detour Nima II river to El Palmar.
31/8/1988		3.8mm (R)	Km 174	Rio Samalá river was overflow in that km of the road to the Pacific inundating many houses.
12/9/1988	Heavy Local heavy rains		Nueva Candelaria Retalhuleu	The suspending bridge from Palajuy ranch, located in Nueva Candelaria Retalhuleu it was destroyed in Samala river, witch was overflow due to the storm
22/9/1988	Rains	2.1mm (R)	Champerico.	Champerico is affected, 2,000 isolated families due the bad shape of the road, Samalá river overflow caused by the rains witch made a swamp on the main slip roads.
1989/2/5		14.8mm (L)	Olintepeque and-or San José Chiquitajá ???	Xequijel river was overflow, material damage to housing and crops.
1989/5/5	Rains	2.8mm (A)	La Esperanza	In Quetzaltenango many affected zones due to the rain and inundation. Aldea Santa Rita from municipio La Esperanza, among the affected.

**RIO SAMALA**

DATE	CAUSE	PRECIPITATION RECORD	INUNDATION AREA	DAMAGES ETC
14/5/1989	Rains	0.0mm (A)	El Palmar	The rains overflow the Santiaguito volcano crater, witch simultaneously through lava, destroying 40 blocks from San Pedrito ranch of this jurisdiction.
1989/4/5		0.0mm (L)	Quetzaltenango	

PRECIPITATION RECORD (L)Labor Ovalle(Quetzaltenango); (A)El Asintal; (R)Retalhuleu



# RIO MARIA LINDA

DATE	CAUSE	PRECIPITATION RECORD	INUNDATION/AREA	DAMAGES ETC...
15/10/1923			San José	The south cost is interrupted in roads, rail roads, and telegraphic
28/6/1927			Río Achiguate overflow	The roads were interrupted, rail roads and telegraphy
1928/5/6	3 days of Storm		San José	Many damages to the population
31/10/1931			Quita Sombrero lake/ P. S. José	The Quita Sombrero lake was overflow over the population
14/10/1932	Storm		San José	Serious inundation, overflow, and heavy rains
28/8/1933			San José	Serious inundation, the water went up to 1.50 m
14/9/1933	Heavy Rains		San José	Due to the rains the port was inundated again
18/9/1933	Storm		San José	Dangerous Storm, 1.56 m.
25/9/1933	Heavy rain		San José	The communications are cut off, the people left the port
1934/8/6	Storm		San José	The disasters continue due to the storm, the port is inundated
13/6/1936	The Storm continues		San José	
1936/9/10			San José	The houses have a foot of inundation
1949/4/10	Heavy Rains		San José	10 people die due to the rains
13/10/1949	Local heavy rain		María Linda River	María Linda River overflows. 5 dead due to the currants
1950/7/10	Local heavy rain		San José	Inundated due to the heavy rains, damages to the roads
21/9/1953	Local heavy rain		San José	Inundation
30/9/1953	Local heavy rain		San José	Inundation again
15/10/1954			San José	Evacuation from the port due to the inundation
1959/12/6	Local heavy rain		Naranjo River	Naranjo river overflow, problems on the roads
9/11/1968	Heavy rain		San José	Most part of the town is inundated, the opening got stuck making the channel go up and overflowing the streets to 3'
18/10/1968			Pt. S José/River bed Chiquimulilla	5,000 evacuees for a meter of water on the river bed overflow in Chiquimulilla
19/10/1968			Pt. S José/Río Achiguate	6,000 evacuees, housing almost submerged, inundation because the overflow of the Achiguate river
1969/11/8	Local heavy rain		la Compañía Ranch	Big material damages, the water went up one and half meters inundating many farms.
1969/6/9			Pacific Road	50 dead, 100 injured, people and animals got isolated on the south. The population of Iztapa got isolated due to the currants of María Linda River.
1969/8/9			San José e Iztapa-Antigua	Roads and electrical disaster at the south, the roads are totally interrupted. The town near Agua Volcano is affected by the currants.

# RIO MARIA LINDA

DATE	CAUSE	PRECIPITATION RECORD	INUNDATION AREA	DAMAGES ETC...
26/9/1969			San José	4 dead, the situation is terrible in Escuintla the port is inundated, many families have being evacuated.
21/9/1974		73.0mm	San José	At San Jose Port the water got up to 2 m, there is no communication from the port to Escuintla.
13/9/1975		5.7mm	San José	Slope collapse and landslides on the roads. Big problems on the south cost, the port is inundated.
19/9/1977		0.0mm	Hacienda Varsovia, road to the port	A ranch on the road to the port at the km. 93 got isolated.
22/9/1978	Storm	3.0mm	San José	Some towns are declared in emergency stage and also Guanagazapa
23/9/1978		0.0mm	Guanagazapa	Some bodies from the cemetery are floating, there is danger for diseases.
1978/11/10		4.4mm	San José	The crossing is difficult due to the overflow. Achiguate river on the 80 and 90 km
20/9/1982	Cyclone	157.2mm	San José	The river is overflow again, the people has to evacuate again.
13/9/1983	Heavy Rains	91.8mm	San José	Inundation, the main entrance is the most affected.
17/9/1983		0.0mm	Pueblo de Iztapa	Is inundated. The see came inside 75m on the urban zone. 100 evacuees.
26/8/1984		0.0mm	San Jose. and Canal de Chiquimulilla	Laberinto and El Embarcadero neighborhoods suffered inundation, caused by the overflow of the Chiquimulilla channel.
1988/2/9		14.4mm	San José	many days of inundation, the road is impassible the traffic was diverted to the new road.
22/9/1989	Tropical Heavy Rains	0.4mm	San José	Inundation the most affected is Miramar neighborhood.
26/9/1989		1.9mm	San José	Thousands of people are evacuated due to the overflow of the rivers Achiguate and Naranjo
26/9/1989		1.9mm	Iztapa	Naranjo river flows to Iztapa port, is overflow causing inundation in hundreds of ranches.
21/5/1989		0.0mm	San José	During the last days it has being inundated due to the Achiguate. The river goes away from its natural river bed and trespasses the blocked bar.
30/7/1989		23.1mm	San José	The water is overflow and the people is moving on small boats.
25/9/1989		153.8mm	San José	The water is stagnant due to the rains.
26/9/1989		1.9mm	San José	The water got to 2m, living 50,000 without housing. The entire port is inundated, this is the worse in 40 years.
27/9/1988	Rains	0.9mm	Palin	Colonia El Sacramento is the most affected.

**PRECIPITATION RECORD** Puerto San Jose

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## **1. Outline of discussions with agencies**

### **① Discussions with INSIVUMEH**

Frequent discussions were held with INSIVUMEH counterparts since the inception of the study. Especially in the beginning, Progress Report 1 of this study was used to explain the work and progress of the first fiscal year. Both parties agreed with the contents and confirmed the purpose of the second year study. Safety countermeasures and procedures for field investigation work were also discussed.

The director of INSIVUMEH met with team members almost every week as well as informally to discuss the schedules, logistics, news and media reports, and daily concerns. This was important for coordinating the efforts with counterpart personnel and addressing the latest safety issues.

### **② Discussions with CONRED**

CONRED is the principal agency for hazard map utilization and is responsible for planning for disaster prevention and response. CONRED has collected and compiled a large volume of data regarding past disasters, and created a GIS database of several disaster factors. A discussion was held with officials of CONRED to explain the project and Progress Report 1. They provided photographs of Hurricane Mitch damage and several important data for the study. Moreover, they explained their risk evaluation project.

### **③ Discussions with MAGA**

MAGA demonstrated and explained their GIS and database related to disaster prevention. They have national coverage of most infrastructure, topographic, and natural resource themes taken from 1:250,000 and 1:500,000 scale maps and data. They described how selected data themes are combined to create intermediate analytical results, which are combined with additional thematic data to perform the final analysis and produce the result. All data layers (themes) are fully documented using metadata.

### **④ Discussions with MEM**

The project was described and data requirements were discussed with officials of MEM. They have many data associated with petroleum exploration and they provided several folios of data to look through. Later they arranged to have copies made of the selected maps and records.

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**⑤ Discussions with DGC**

A discussion was held to describe the project to officials and others of DGC. They provided a data CD of landslides on roads due to Hurricane Mitch, and other related data. Additionally, a request was made to the Director to provide another document, "Estudio sobre Inventario de Carreteras en Guatemala" (Study of Inventory of Roads in Guatemala), by Louis Berger. It has updated information about landslides on unpaved roads, however the document has not been received yet.

A request was made to the Roads Directorate for the analysis of soil samples in the Soils Laboratory. They accepted the request to perform some tests in their Laboratory and others in the Laboratory of USAC (University of San Carlos). Tests were conducted during August-September and the results were sent to INSIVUMEH.

**⑥ Discussions with the Municipality of Guatemala**

The team interviewed officials of the Division of Metropolitan Development Plan and discussed the project. As a result of these discussions, an official request for data was made to the Mayor of Guatemala City for the following:

No.	Titles of Documents
1	Digitized map of Ravines in Guatemala City
2	Digitized map of damages by Hurricane Mitch
3	Report of damages to 173 Public Buildings in Escuintla and Guatemala City
4	Construction Code
5	Several studies of CEPAL, CELADE, related to Hurricane Mitch

Only item no. 4 in the above table was received completely. Other digital data were received but do not have attributes so they cannot be used. It might be a compatibility problem with the conversion to Arcview GIS format. The solution is pending.

**⑦ Discussions with AMSA**

A discussion was held with AMSA to explain the project. Subsequently, AMSA explained their mission and project. They provided data of Hurricane Mitch damage and the recovery project of Rio Villalobos basin.

**⑧ Discussions with SCEP**

Discussions were held with officials of SCEP to discuss a recent project to evaluate the seismic vulnerability of public buildings in Guatemala. A method for quick evaluation of

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buildings and structures has been developed and published, as well as a training manual. They provided copies of these documents.

Team members met with a local scientist (Dr. Juan Pablo Ligorria) to discuss his recent work with SCEP regarding the seismic vulnerability of public buildings in Guatemala. In related research, he has installed 12 new strong motion seismic sensors around Guatemala City and Escuintla areas. He provided a copy of his report and preliminary findings regarding a recent earthquake.

⑨ **Discussions with the universities**

A professor at Universidad de San Carlos Guatemala helped with photo interpretation work and described the present status of geomorphologic maps in Guatemala. The concept of landforms in Guatemala was also discussed.

A discussion was held with a professor at Universidad Mariano Gálvez regarding building codes, regulations, and general construction conditions. He explained that there is only a recommendation and that no official codes of any kind existed in 1976. The current version of building codes is dated 1996 and contains several references and formulas related to seismic loads and properties for determining construction requirements. Most government, public, and some commercial buildings are constructed to conform to those recommendations. A new version of the building and construction recommendations is being drafted and should be available in 2002.

A discussion was held with a professor at Universidad Valle de Guatemala about data and maps of Quaternary deposits in Guatemala City that were obtained previously. There were no additional data or revisions to the maps.

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## **2. Status of other donors**

### **① Discussions with USAID and USGS**

Discussions were held with the USAID to discuss the project and progress report 1. They described the purpose of USAID and USAID activities in Guatemala and neighboring countries affected by Hurricane Mitch. USAID coordinates all US based assistance and projects in the region, including coordination between US and local government agencies. Several projects were described, including the projects of the USGS, and coordination of assistance with CONRED and MAGA.

Several meetings were held with the USGS to discuss the project and Progress Report 1, USGS activities in Guatemala since 21 Sept, 2000 (most recent Fact Sheet), Hurricane Mitch data and satellite images, geology data (GIS), and topographic map data (GIS). The topographic map data is still in progress (air photo interpretation) and won't be available until the end of 2001. Geology data is available in GIS format from SNIG through IGN. A web site for additional GIS data ([www.clearinghouse.segeplan.gob.gt](http://www.clearinghouse.segeplan.gob.gt)) was discussed. The USGS has been working with NOAA to install more river gaging stations and telemetry. A pamphlet was obtained that describes the gaging station project. The volcano hazard and vulnerability maps are in the final stages of production and will be available from 2002. Another pamphlet was obtained that describes the Municipal GIS project for selected towns. Another official of the USGS was met to discuss the Municipal GIS project. He explained that it is part of the Hurricane Mitch project and will finish up at the end of 2001. Already 5 municipalities have basic GIS layers of topography. Other data include orthophoto maps (1:20,000), GIS data themes (1:50,000), and a Municipal database. The project was in progress and not all data had been created yet. Some of the data was provided for Puerto Barrios, Mazatenango, and Escuintla for evaluation.

### **② Discussion with Spanish representative**

A discussion was held with a representative of the Spanish assistance agency, ITGE-AECI, to discuss their activities in Guatemala. They are currently in the project development phase and looking for a counterpart agency and financing for a new project. The project would evaluate seismic hazard on a national scale based on the 3 types of earthquakes that occur in Guatemala. Factors would include type of motion, velocity, and attenuation. The results would be compared to the construction codes and regulations to check the adequacy of them

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### Chronology of Natural Disasters in Guatemala from 1469 to 2003 (as of June/2003)

Date	Place	Disaster Type	Severity and Damages
1469	V. Atitlán	V	
1469	V. Santa Catarina Mita (V. Suchitán)	V	
1469		E	Earthquakes in Guatemala
1505	V. Atitlán	V	
1524	V. de Fuego	V	Ash and scoria eruption
1524-April or May	V. Atitlán	V	
1526	V. Fuego		
1526-7-19/20? 8-15?	Panchoy Valley	E	<p>Earthquake felt in a wide area from Panchoy Valley to El Salvador. It caused the removal of Spanish settlement (unknown location) to Ciudad Vieja*.</p> <p>According to several sources the estimated intensities are:                      IMM= VI-VIII at the Panchoy Valley (Antigua),                      IMM=VII at Santa Ana Volcano, El Salvador.                      ML=7.1?</p> <p>No data of victims and damages area available.                      SS: It is estimated was due to the subduction between Cocos and Caribbean tectonic plates at the sea shoreline in the border of Guatemala and El Salvador                      D=about 30 km.</p> <p>* Ciudad Vieja was founded on 1527-11-22 in the place called Bulbuxia in Cachikel language which means Almolonga or <i>water spring</i>.</p>
1530-3-21	Ciudad Vieja	E	Earthquake in Capital of Guatemala
1530-5-29	Quetzaltenango, San Marcos	E	Earthquakes in this area.
1533	Guatemala-Tehuantepec	E	
1535	V. Fuego	V	
1538	Alta Verapaz	E, L	<p>A violent earthquake caused a large landslide about 3 km east of present day San Juan Chamelco, and so frightened the inhabitants of the area that they migrated about 50 km to the east.</p> <p>Mag. 6.5 to 7.5</p>
1541-9-11 2 AM	Ciudad Vieja	E, V, L	<p>Ciudad Vieja (1527-1541), the old Capital City of Guatemala was destroyed by landslides and avalanches, including debris flow of rocks, mud, trees and water from the Agua Volcano. This destruction produced the moving of the city from the Almolonga Valley to the Panchoy* Valley (City of Santiago de los Caballeros now "Antigua" from 1541).</p> <p>Two destructive earthquakes killed approximately 150 Spaniards and at least 600 Indians and Negroes. Two days of rain prior to the earthquakes added damages from avalanches and landslides.</p> <p>* It was a lagoon formed by the Pensativo River which now is the Barrio Tortuguero. The city was moved on 1543-3-16.</p>
1542-1551	V. de Fuego	V	
1552-3-31	V. Fuego	V	
1561	Guatemala	E	Earthquake in Guatemala
1565-2	Antigua	E	Series of violent earthquakes caused extensive damage in and near Antigua
1565-8 (Feb?)	V. Pacaya	E, V	Earthquakes preceded the eruption of Pacaya Volcano.
1565-8/9- ?	Ciudad Vieja, San Juan de Comalapan	E	<p>IMM=VIII at Santiago de los Caballeros (Antigua), Comalapa, Almolonga (Ciudad Vieja), Patzún, Chiapa de Corzo (México), Zinacantán (México).                      IMM=VII+ at Escuintla, Chimaltenango, Zelajay, Las Casas (México)                      IMM=VI ? at Sololá</p>
1566-5 ? 1-2 PM	Quetzaltenango, Taxisco	E	IMM=VIII ?
1575	V. Fuego	V	
1575-1-20	Antigua	E	Earthquakes in Antigua. They began in 1574 and ended January 20, 1575
1575	Antigua	E	IMM=VIII at Antigua. According to some sources it also was felt at San Salvador Texacuangos (El Salvador) with IMM=VIII. Also León (Nicaragua) and probably in Chiapas (México)
1576	Antigua	E	Partial destruction of this city
1577	V. Fuego	E	
1577-11-29/30	San Marcos, Sacatepéquez	E	<p>Earthquake swarm. Strong earthquake felt on Nov./30, felt in Guatemala and México.</p> <p>IMM=VIII at San Marcos Sacatepéquez, and Sololá,                      IMM=VII at Antigua,                      IMM=V at Chiapas (México)</p>

1579	V. Atitlán	V	
1581-12-26/27	V. de Fuego	V	Ash and steam eruption. The cloud was so thick that it was necessary to use candles during a full day in Guatemala.
1582-1-14	V. Fuego	E, V	Scoria and lava eruption. Earthquakes.
1585-1-16	Antigua	E	Strong earthquakes in Antigua
1585-7---12	V. Fuego	V	Ash and lava eruption at V. Fuego
1586-12-23	Antigua	E, V	Long earthquake sequence beginning January 16, 1585 and ending with largest shock on this date. Accompanied by eruption of Fuego Volcano. IMM=VII to VIII. About 60 houses of poor people were destroyed, the others and the Church of La Antigua were severely damaged. Many earth collapses are reported, as well as opening of cracks in the ground.
1587-12-23	Antigua	E	About 60 houses of poor people fell down
1591-3-14	Guatemala and México	E	Earthquake damaged the village of Chiapa de Indios IMM=VII to VIII EP= 16.00°N-92.25°W
1607-4	Antigua	E	Many buildings collapsed, killing a number of people in Antigua. Earthquakes ceased April 8 <sup>th</sup> .
1607-10-9 10PM	Antigua	E	IMM=VII to VIII, 29 deaths. Aftershocks lasted until 4 to 6 months.
1609	Antigua	E	Series of earthquakes during four months
1614	V. de Fuego	E, V	
1620	Guatemala	E	Earthquakes in Guatemala at beginning of year
1623	V. Fuego	E, V	Ash and steam eruption from V. Fuego, Earthquakes continued for 9 days
1623	V. Pacaya	V	
1631	V. Fuego	V	
1631-02-18	Antigua	E	Several churches destroyed
1631	Guatemala	E	Some time between May and October: Earthquakes in Guatemala
1651 ?	V. Fuego	V	
1651-1699	V. Pacaya	V	
1651-2-18 1PM	Antigua, V. Pacaya	E, V	Extensive damage in Antigua. Ash eruption of V. Pacaya. Earthquakes from February 18 to mid-April IMM=VII to VIII Ms=5.4 to 6.0 EP= 14.52°N-90.68°W
1651-4-13		E	
1652	Chiapas (México) y Guatemala	E	
1657-middle	Antigua	E	Strong earthquakes in the capital of Guatemala
1659	Antigua	E	IMM=V
1663	V. Atitlán	V	
1663-5-1	Antigua	E	Damages in all houses and churches of this city
1663-5-18	Antigua	E	Damages in several main buildings of this city: slaughterhouse, governors office, Mercedes and San Augustin churches and other catholic related buildings.
1664	V. Pacaya	V	
1668	V. Pacaya ?, V. Fuego ?	V	
1671	V. Pacaya ?, V. Fuego ?	V	
1671-8-16/17	V. Pacaya	V	
1674	V. Pacaya	V	
1676	San Andrés Iztapa, Antigua	E	IMM=VI-VII
1677	V. Fuego	V	
1677-7	V. Pacaya	V	
1678-08	Guatemala	E	IMM=V?, SS: Earthquakes produced by volcanic eruption of Pacaya or Fuego volcano
1679	V. Fuego	V	
1679-03-3/4?	Comalapa, Antigua	E	IMM=VII+, Maximum intensity referred to Comalapa
1681-7-22	Antigua	E	IMM=VII. A swarm of earthquakes caused extensive damages in this city. Main event on July 22 <sup>nd</sup> .
1683-05	Antigua	E	Series of earthquakes in Capital of Guatemala. Much damage
1684-08	Antigua	E	Earthquake swarm caused notable damage in Antigua area
1685-9-23	V. Fuego	V	
1686	V. Fuego	V	Ash eruption of V. Fuego



1686-11	Antigua	E	
1687-09	Antigua	E	
1688-10-10	Chiapas (México), Guatemala	E	IMM=VII. Maximum intensity referred to Chiapas. In Guatemala IMM=VI?
1689	V. Fuego	V	Ash eruption of V. Fuego
1689-2-12	Antigua	E	Earthquake swarm caused extensive damage and loss of life in Antigua area. Heavy damage in the parish of San Sebastián and the Cathedral IMM=VIII at La Antigua, San Pedro Huertas. Ms=6.0. This is called the earthquake of "Santa Olaya". EP= 14.55°N-90.75°W
1690	V. Pacaya	V	
1691	Antigua	E	IMM=VII
1693	Antigua	E	
1699-1700	V. de Fuego	V	
1702	V. Fuego	V	
1702-8-4	Antigua, Cubulco (Verapaz)	E	A strong earthquake caused extensive damage in Antigua. Known as "earthquake of Santo Domingo". Mag=5.5 to 6.5, estimated epicenter: 15.25°N-90.60°W
1705-2-01	V. Fuego	V	Ash and lava eruption from V. Fuego. The lava flowed in the direction of the hacienda El Zapote in Escuintla; ash fell at Rabinal.
1706-1710 or 1707-1711	V. Atitlán	V	
1707-10-04?	V. Fuego	V	
1709 or 1710	V. Fuego	V	Eruption of scoriae
1713-08-12	Zacualpa	E	Mag=5.5 to 6.5. Destroyed the church of Zacualpa
1717-8-18 to November	V. Fuego	V	Eruption of ash and scoriae at V. Fuego
1717-8-27/28	Antigua	E, V	IMM= III to IV, Ms<5. SS: Tremors due to eruption of Fuego volcano. EP= 14.46°N-90.86°W D= 0 to 5 km.
1717-9-29/30 7:00 PM/9AM	Antigua (Santiago de los Caballeros)	E, V, L	Antigua damaged on Sept./29, destroyed Sept./30. Loss of life was extensive. Earthquakes accompanied by violent eruptions of Fuego Volcano. It is called the earthquake of <i>San Miguel</i> . IMM= IX at Alotenango, total destruction, trees with exposed roots and the ground had cracks. IMM=VII+ at Antigua, partial destruction of the city, with main catholic related buildings damaged. IMM=VIII San Gaspar Vivar, Candelaria, Santa Inés, Santa Cruz, Santa Isabel, San Cristóbal Alto y Bajo, Carmona, San Juan del Obispo, Ciudad Vieja. IMM=VII+ at San Andrés Izapa, Santiago Zamora. IMM=VII at Patzicia, San Cristóbal Amatitlán, Santa Cruz Balanyá. IMM=VI+ at Guazacapán. IMM=V at Chimaltenango, Comalapa, Tecpan, San Matín Xilotepe Ms=6.5, ML=6.3 EP= 14.52°N-90.80°W. D= 5 to 15 km. About 3,000 houses were damaged as well as all the churches. SS=Either tectonic activity or subduction. Secondary effects of this earthquake were the landslides, earth collapses and lahars. Most of them were produced at the slopes of the Agua volcano were water flowed from several cracks to downstream containing sulfurous matter, trees, rocks and sand flowing into the Guacalate river and then up to the seashore at the Pacific Ocean. It is estimated this debris flows modified in large way the riverbed of this river.
1717-10-3 11-12 PM	Guazacapán	E	IMM=VI to VII at Guazacapán. Ms=6.7. Aftershock of the previous earthquake. It had no upwards movements as the previous, so damage were less. EP= 14.00°N-90.50°W. SS=Subduction zone.
1717-10-14		E	Aftershocks of the Sept/29 <sup>th</sup> earthquake
1728	Manchén, Tactic	E	Mag=5.5 to 6.5. This earthquake produced damages in Manchén and Tactic
1717-1721	V. Atitlán	V	
1728	Alta Verapaz	E	An earthquake damaged the town of Dolores Manche and the church in Tactic Mag=5.5 to 6.5
1730-1737	V. de Fuego	V	
1732-5	V. Fuego	V	

1733-5	Quetzaltepeque and Jocotán	E	The churches of Quetzaltepeque and Jocotán collapsed. Besides, the churches of Chiquimula, Santa Clara, San Luis Jilotepeque, Ipala and Santa Catarina Mita, suffered damages. IMM=VII+: Chiquimula IMM=VII: Santa Catarina Mita, Santa Elena, Quetzaltepeque, San Luis Xilotepeque, Ipala, Jocotán, Esquipulas (VII?). Ms=5.4 Also some places in El Salvador were affected with intensity of VI: Sonsonate, Izalco, Santa Ana. SS=Faults system of Polochic-Motagua.
1733-8-16	Patzicia, Alotenango, San Andrés Dean	E	IMM=VII+: Patzicia IMM=VII-: Alotenango, San Andrés Dean. Ms=5.7 EP= 14.58°N-90.88°W
1737-8-27 to Sept.24	V. Fuego	V	Ash eruption of V. Fuego
1737-09-24	Antigua	E	Many earthquakes in capital of Guatemala from Aug.27 <sup>th</sup> , especially on Sept.24 <sup>th</sup> . IMM=IV to V. No damages are reported
1739?	V. Fuego?	V	
1741-02-15	Cobán and Cubulco	E	Mag=6.5 to 7.0. The earthquakes damaged the churches of both towns
1742-8-10	South of Guatemala	E	IMM=VIII-: San Antonio Suchitepequez, Coyutenango, San Andrés Villa Seca, San Francisco Zapotitlán, Santiago Sambo IMM=VII?: Tacuilulá, Siquinalá, San Bartolomé, Santa Ana Mixtán, Escuintla Ms=7.2 EP= 13.75°N-91.50°W. SS=Subduction zone
1743-10-15	Zacapa, Chiquimula	E	IMM=VII: Zacapa and Chiquimula Ms=6.7 SS: Either by the Motagua fault, Jocotán fault (no previous activity known), or the Chiquimula graben.
1747-10-13	South of Guatemala	E	IMM=VII-VIII: Cuyotenango, San Bartolomé Mazatenango, Qetzaltenango, Retalhuleu, San Bernardino Such. Ms= 5.4 EP= 14.66°N-91.50°W SS=Cortical faulting
1750-03-08	Soloma, Chiantla	E	IMM=VII?, Mag=6.3 to 6.7. Collapse of the church of Soloma and damaged that of Chiantla.
1751	V. Fuego	V	
1751-3-4 8:00 AM & 2:00 PM	Antigua, Comalapa	E	Is one of the most destructive earthquakes of the XVII century. It is called the "earthquake of San Casimiro". Antigua damaged. Cathedral dome destroyed. Many churches and houses were damaged. It was a series of earthquakes of which the strongest were at 8AM and 2PM. IMM=VIII: Antigua, Comalapa IMM=VII-VIII: Guazacapán, San Felipe de Jesús, San Pedro de las Huertas, San Felipe Extramuros, Zaragoza IMM=VI+: Jalapa IMM=V-VI: Area between Jumay and Mataescuintla (Santa Rosa Valley) Ms=7.2 EP= 13.50°N-90.50°W SS= Subduction zone
1757-10-4	Antigua, Alotenango	E	IMM=VII- : Antigua, San Juan Alotenango IMM=VII?: Comalapa Ms=6.7 EP= 14.50°N-90.75°W SS=Subduction zone
1764-9	Quetzaltenango	E	Mag=6.5
1765	V.Fuego	V	
1765	V. Cerro Quemado	V	
1765-4-20	Chiquimula Dept.	E	50 killed and many injured; many towns destroyed in Chiquimula. Earthquake may have originated on the Motagua fault.

1765-6-2 Night	South-east of Guatemala (Central Plateau)	E, L	In total 53 persons died IMM= VIII: Chiquimula (24 deaths) IMM=VII: Concepción de las Minas, Zacapa IMM=VI-VII: Esquipulas, Jalapa, Antigua, IMM=V-VI: Between Jumay and Mataescuintla Ms= 6.5 EP= 14.83°N-89.50°W Landslides due to the earthquake were reported SS=Jocotán fault or the Ipala graben
1765-10-24	South-west of Guatemala (Western Plateau)	E, L	It is known as the "Earthquake of San Rafael". Severely damaged many towns in Guatemala. IMM=IX: San Antonio Abad IMM=VIII-IX: San Antonio Sacatepéquez, San Cristobal Cucho, San Pedro Sacatepéquez IMM=VIII: San Miguel Sigüila, San Martín Sacatepequez, Concepción Chiquirichapa, Quetzaltenango, San Juan Ostuncalco, Santiago Tejutla, San Cristóbal Mártir, Tacaná, Santa Isabel Tajumulco IMM=VII: San Juan Orintepeque, San Marcos, San Mateo, Comitán, Concepción Tutuapa, Sololá, San Bartolomé Sipacapa, San Miguel Ixtahuacán IMM=VI: San Pedro Almolonga, Zunil, Cantel, San Cristobal Cabircán, Comitán Ms=6.5, ML=6.7 EP=15.00°N-91.75°W SS=Motagua fault? or subduction? The earthquake produced landslides and liquefaction of the ground
1765 late Oct. or Nov.	V. Tajumulco	V	
1769		E	IMM=V
1772-6-15		E	IMM=VII+: San Antonio Suchitepéquez, Sapotitlán, Mazatenango EP=14.58°N-91.50°W Ms=5.7 SS=Cortical failing
1772-7-15	San Bartolomé, Mazatenango	E	
1773- end of May	Antigua	E	
1773-6-03	V. Fuego	V,E	Earthquakes lasted for five days

1773-7-29 (21:37 GMT)	Antigua, Central Plateau	E, L	<p>The city of Antigua Guatemala was destroyed by the earthquakes of <i>Santa Marta</i>, causing the moving of the city on 1775 to the present location at the Ermita Valley. It was part of an earthquake swarm beginning in May and continuing until December. Very strong shocks occurred on June 11 at 5:00 and 17:00 hours (local time). Large aftershocks occurred on September 7 and December 14.</p> <p>IMM=IX: Santiago (Antigua)  IMM=VIII: Patzicia, San Raymundo de las Casas, Tecpan, Patzun  IMM=VII: San Martín Jilotepeque, San Agustín Supango, San Juan Sacatepéquez, Santa Ana Chimaltenango  IMM=VII-: Jocotenango  EP=14.90°N-90.57°W  Ms=6.5  SS=System of Motagua fault? or subduction?</p> <p>Regarding this earthquake Díaz V.(1933) based on old data, wrote :  "the earthquake of 29<sup>th</sup> was the total ruin of Guatemala, that lapsed less than one minute, it was a horizontal movement, which oscillated as in the space of half a vara* (0.835 m); but the violence would be as ten oscillations in each minute second (sic)... destroyed all the buildings and churchs, which turned down, and although few of them remained standing, were left useless, and very few those which can be repaired. The deads are about hundred..."  half a vara would means about 42 cm.</p> <p>It is worthy to note that before this earthquake, on June 11<sup>th</sup> there were some tremors of IMM=VII in Antigua. During this day many tremors happened, being the mains on 22:30 and 23:00 (GMT). Tremors continued until June 30<sup>th</sup>.</p> <p>On the other hand, after the main earthquake of July 29<sup>th</sup>, several aftershocks were felt many times specially on July/30<sup>th</sup>, September/7<sup>th</sup>, this last one may have had an intensity of VII, and a magnitude of 6.8 and located at 14.50°N-90.75°W according to White and Cifuentes 1988 as cited by G. Peraldo, et al (1999). After that again other aftershock was felt on October 26<sup>th</sup>., about 3AM, which is reported to be very long and very violent.</p>
1773-12-13 by 1:00 PM (19:00 and 19:15 GMT)	Antigua and Hermita Valley	E, L	<p>There were two earthquakes separated by one quarter of an hour  IMM=VII+ at Antigua  IMM=VII at Mazatenango  IMM=Between IV and V at Hermita Valley  Ms=5.7  EP=14.50°N-90.80°W  SS=System of Motagua fault</p> <p>By this time the real power already had been moved from Antigua to the Hermita Valley the location of the present capital City.</p> <p>This earthquake is also regarded as aftershock of that of July/29<sup>th</sup>. Furthermore it is considered the aftershocks continued until at least January/1774, period in which man tremors (sometimes up to fifty in a day) happened.</p>
1775	V. Fuego	V	
1775-7-1,2/31	V. Pacaya	V, E	<p>Ash erupted from this volcano covered the provinces of Suchitepequez and Escuintla. Earthquakes associated to the eruption of Pacaya Volcano ("Humito" hilldise aside of V.Pacaya)  EP=14.36°N-90.60°W</p>
1776-5-30	Cuilapa, Chiquimulilla	E	<p>This earthquake affected mainly to El Salvador (San Salvador IMM=VIII) and some four to five cities in Guatemala, as follows:</p> <p>IMM=VII at Cuilapa, Chiquimulilla, and area between Zinacantán and Moyuta  IMM=VI? Escuintla  EP=13.18°N-90.08°W  Mag=7.2  SS=Subduction</p>
1776-9-6		H	<p>Hurricane. Number of deaths: more than 6,000. According to the NCEP (National Center for Environmental Prediction) it was the 6<sup>th</sup>. deadliest Atlantic Tropical Cyclon from 1492.</p>
1780-9-21	Guatemala City, Antigua	E	<p>IMM=V-VI at Guatemala City and La Antigua  SS=Subduction</p>
1783		E	<p>Earthquakes in Guatemala</p>
1784-1-6 (?)		E	<p>Earthquakes in Guatemala</p>
1785	V.Cerro Quemado	V	<p>Eruption of V. Cerro Quemado also known as Quetzaltenango</p>

1785-1-06	Polochic Valley	E	Mag. ~7.3 SS= Faults of Chixoy-Polochic
1791-3-16	San Pedro Sacatepéquez	E	IMM=VII at San Marcos and San Pedro Sacatepéquez IMM=VI at Cuilapa EP=15.00°N-91.75°W Ms=5.4 Also damages in San Cristobal Cucho, San Antonio Sacatepequez
1795-12-29	Chiantla	E	IMM=VII at Chiantla and Concepción, Huehuetenango EP=15.33°N-91.38°W SS= Faults system of Polochic and Motagua
1798-7-2		E	Earthquakes in Guatemala
1799	V. de Fuego	V	
1805	V. Pacaya	V	
1811-05-23	Guatemala City	E	IMM=V?
1816-6-02	Sta. Lucía Utatlán	E	
1815-9-11		E	Earthquake in Guatemala
1816-7-21 midnight /22/9:30 AM (stronger)	Santa María Magdalena (North-West)	E, V, L	IMM= VIII at Soloma, Santa Eulalia, San Juan Ixcay, San Miguel Acatán, San Sebastián Coatán, San Mateo Ixcatán, Todos los Santos Cuchumatanes, Santa Catalina Ixtahuacán IMM=VII+ to VIII at Jacaltenango, Concepción, Petatlán, Santa Ana Huista, San Antonio Huista, San Marcos Jacaltenango, Aguacatán, Chalchitán, Huehuetango, San Lorenzo, San Sebastián, San Pedro Necta, Santiago Chimaltenango, San Juan Atitlán, Santa Isabel, Santo Domingo, Momstenango, Santa María Chimquimula, San Bartolomé, Aguascalientes IMM=VII+ at San Martín Cuchumatán, Malacantán, Malacatancito, Santa Bárbara, Colotenango, Ixtaguacán, San Gaspar, San Ramón, San Miguel Totonicapán, San Andrés Saicabaja, San Andrés Xecul IMM=VII-VII+ at San Cristóbal de las Casas Chiapas (México) IMM=VII at Chiantla, Santa Cruz Verapaz, San Cristóbal Verapaz, Santo Domingo Cobán, San Pedro Carcha, San Juan Chamelco, Tactic, Tamahu, Tucuru, San Miguel Chicaj, Santiago Cubulco, San Pablo Rabinal, Salamá IMM=VI+ Joyabaj IMM=VI at Nueva Guatemala, IMM=VI at Departamento Sacatepéquez Mag.~7.5 Mw=7.5-7.8 SS=System of Chixoy-Polochic faults EP=15.45°N-91.50°W D=10 km Damages associated to the intensity VII or more cover about 13,000 km <sup>2</sup> .  As second seismic source the activity of Santa María Volcano (Cerro Quemado) is mentioned. Epicenter of this activity was 14.75°N-91.55°W. Landslides were produced at the slopes of the Santa María Volcano which also started eruption probably due to an stress relaxing in the block of Chixoy-Polochic, where it moved relatively to the east in comparison to the north block. It may have produced the ascending of magma and the consequent eruption of the volcano.
1818-2-17	Quetzaltenango	V, E	Ash eruption of Cerro Quemado
1820-2	Almolonga, Quetzaltenango	E	IMM=VI-VII at Almolonga Ms=5.4
1821	V. Cerro Quemado	V	Steam eruption of Cerro Quemado
1821-5-6		E	IMM=VIII to VIII+: Sacapulas IMM= VII+ to VIII: San Pedro Jocopilas, Ilotenango, IMM=VII to VII+: Totonicapán, old house fell IMM= VII: Almolonga IMM=VI+ to VII: Salamá, Todos los santos, San Martín Cuchumatanes, Chiantla Ms=6.2 EP=15.33°N-90.75°W SS= system of faults of Chixoy Polochic  Although 5 years had past it is regarded as an induced earthquake by the one of 1816/7/22
1822	V. TAJumulco	V	
1823	V. Quetzaltenango	V	Steam eruption
1826-11	V. Atitlán	V	

1826-1829	V. de Fuego	V	
1827-3-27	V. Atitlán	V	
1827-9-1	South Region	E	IMM= VII+ at Escuintla, San Marcos de la Laguna IMM=VI at San Marcos de la Laguna Ms=7.0 EP=13.75°N-91.46°W D=30 km SS= Subduction
1827-9-19/11?	V. Fuego	V, E	Ash and possibly lava eruption of V. Fuego. Earthquakes
1828-1	Atitlán	V, E	Eruption of V. Atitlán. Earthquakes (questionable eruption)
1829	V. Fuego	V	
1829-12-17	Chiquimula,	E	Earthquake in Guatemala, felt throughout the country IMM=VII+, Mag=7.1 EP=14.16°N-90.25°W
1830-3-1	Antigua	E	Swarm, similar to that of 1773, lasted from March 1 to May 18. Destroyed many buildings in Antigua. Major aftershock on April 23.
1830-4-21/23?	South Region	E	IMM=VIII at Amatitlán, Pacaya volcano, Petapa-Santa Inés IMM= VII at Ciudad Guatemala, Palín, Pinula, Villa Nueva EP=14.47°N-90.60°W Ms=6.0-6.3 ML=5.9 SS= Guatemala graben ? There were faults and cracks in the ground surface, as well as liquefaction
1830-5-3	South Region	E	IMM=VII+ to VIII Cuilapa IMM=VII+ at Chiquimulilla IMM=VII at Jalpatagua IMM=VI to VII at Candelaria IMM=V at Sonsonate (El Salvador ?) Ms=5.7 to 6.0 SS= Jalpatagua fault ? EP=14.33°N-90.42°W
1831-2-7	Jalpatagua and El Salvador	E	IMM=VI at Jalpatagua (Guatemala) El Salvador: IMM= Comasagua, Jayaque, Armenia, Cacaluta, Izalco, Sonsonate IMM= VI at San Salvador EP=13.20°N-89.70°W ML=7.0 SS= Subduction
1833	V. Atitlán	V	Ash eruption (Sapper questions event)
1836-6-22/23	Guatemala	E	Earthquakes in Guatemala
1837-6	V. Atitlán	V	
1842-05	Guatemala	E	
1842-12	Guatemala	E	Several consequences of this earthquake are related like: water flowing from fountains of the Guatemala City, wall clocks dropping to the floor, as well as adornments, and frames
1845-3-end	Palín, Amatitlán, Petapa	E	IMM=VII-VIII at Palín, Amatitlán and Petapa EP=14.42°N-90.62°W Ms=5.4 to 6.0
1846-1-30	Puerto Santo Tomás	E	Damages reported in the harbour
1846	V. Pacaya	V	
1847-10-19 7 PM	Cahabón	E	Oscillating earthquake was felt in Cahabón.
1851-5-17	South-Western Region	E	IMM=VII+ to VIII at Tajumulco IMM=VII+ at San Marcos IMM=VII at Quetzaltenango IMM=VI+ Amatitlán IMM=VI at Ciudad Guatemala EP=15.08°N-91.78°W SS=extension of the system of faults of Polochic-Chixoy
1852-05-16	Quetzaltenango, Guatemala City		Damage in the vicinity of Quetzaltenango (Feldman question data)

1853-2-9 2:50 AM	Quetzaltenango, Antigua, Amatitlán	E	Major earthquake caused great alarm in Quetzaltenango. Also strongly felt in Antigua and Amatitlán. IMM=VIII at Quetzaltenango IMM=VII+ at San Marcos IMM=VII at Zunil and Cantel IMM=VI at Guatemala city, Antigua IMM= V at Trujillo (Honduras) Ms=7.0 to 7.2 EP=13.50°N-91.50°W SS= Subduction The earthquake was violent and long, with horizontal and vertical movement. Besides Guatemala it was reported to be felt in El Salvador, with no damages and Trujillo, Honduras where it was oscillating movement and very long.
1853-9-30	Sololá Dept.	L	Slope failure in a hillside of Sololá Dept., producing large damages
1854-7-15/26	Guatemala City, Antigua	E	Series of earthquakes in Amatitlán, Antigua, Escuintla, Guatemala City, Salamá, Jutiapa, Sololá, Santa Rosa, Palencia.
1855-1/12—26	Cantel, Zunil	E	A swarm with main events on the 18th and 26th. Damage at Cantel and Zunil. Felt also in San Quetzaltenango, Guatemala City
1855-1-12/26	V. Tacaná	V	
1855-1860	V. de Fuego	V	
1856-03-31			
1856	V. Atitlán	V	
1856-10-22	Guatemala	E	
1856-12-08	Guatemala	E	
1856-12-10	Guatemala	E	
1857-06-03	Guatemala	E	No damages are reported
1857-6-15	Guatemala	E	
1857-7-15	Guatemala	E	Small earthquake
1857-10-14	Guatemala	E	
1857-11-05	Guatemala		
1858-04-24	Guatemala City, Escuintla	E	Light tremors in Guatemala City, Escuintla, Amatitlán?, Asunción Mita?, El Salvador (Cojutepeque)?
1858-08-09	Guatemala	E	Light tremors in Guatemala
1859-01	Guatemala	E	Light tremors in Guatemala
1859-04	Guatemala	E	Light tremors in Guatemala, followed by underground sounds
1859-08-09	Guatemala	E	Light tremors in Guatemala
1859-12-08 20:15	South-East (Guatemala-El Salvador)	E	Major earthquake near El Salvador-Guatemala border. Houses were shattered in Escuintla and Amatitlán. Tsunami at Acajutla, El Salvador. Mag.>6.5 SS= Subduction
1860-1-19 00:30:00	South-Eastern Region	E	IMM=VII at Chiquimulilla, Cuilapa, Guazacapán, Taxisco IMM=VI+ at Antigua IMM=V at Guatemala City Ms=7.2 ML=6.7 EP=14.10°N-90.20°W D=30 km SS=Subduction Intensity of VII covered an area of 9,700 km <sup>2</sup>
1860-12-19	Escuintla	E	Extensive damages to churches and homes in Escuintla. Aftershocks continued until December 31.
1861-8-27	Conquaco, Jalpatagua	E	Damages to homes and churches in Conquaco and Jalpatagua

1862-12-19	South-Eastern (Guatemala-El Salvador)	E	<p>IMM=VIII at Santa Catarina Ixtahuacán, Tecpán  IMM=VII+ at Antigua, Escuintla, Alotenango, Santa Clara, Totonicapán, San Cristobal Totonicapán, San Francisco EL Alto, Cuilapa  IMM= VII at Salcajá, Dueñas, Visitación, Santa Bárbara, San Andrés Semetabaj, Yepocapa, Chimaltenango, Itzapa, Parramos, Acatenango, Patzicia, Patzún, Comalapa, Santa Cruz Balanyá, San Martín Jilotepe, Momostenango, Sija, Cuyotenango, Santiago Jacatenango, Pastores, San Antonio Aguas Calientes, Santa Catarina, Santa María de Jesús, San Lucas, Santa Lucía, Santo Tomás, Magdalena, San Mateo, Santa María Cauqué, Palín, San Miguel Petapa, Amatitlán, Masagua, Rabinal, Hacienda de Mauricio, Don García. Slight damages to old churches in Guatemala City; astronomical observatory reported tilt of 3'29".  EP= 14.40°N-90.20°W  D= 30 km  Ms=7.24  ML=7.4  The area of intensity of VIII and VII was 29,444 km2, and that of VI was about 54,000 km2.  SS= Subduction</p>
1862-12-20 (7-9 ? PM)		E	Aftershock of the previous day earthquake
1863-12-12	Guatemala City	E	The earthquake centered near Guatemala City, caused changes in flow of springs in the northern part of the city, and earth fractures opened in the areas of Jocotenango and El Bosque, causing panic throughout the city.
1869-01-31	Guatemala City, Amatitlán	E	
1869-2-25	San Cristóbal, Verapaz	E	The earthquake caused some ruins in the town of San Cristóbal
1869-11-23	Quetzaltenango	L	Slope failure ?
1870-5-12 3:00 PM	South Region, Santa Rosa Dept.	E	<p>A series of earthquakes between April 4<sup>th</sup> to May 12<sup>th</sup>. where the main ones were on May 3<sup>rd</sup> 4:30 AM and May 12<sup>th</sup> 3:00 PM.  Extensive damage in Santa Rosa. Very little damage at Cuilapa, Ixhuatan, Los Esclavos, Moyuta, Taxisco, Las Casillas, Mataquescuintla, San Rafael  IMM=VIII at Izguatán, Cerro Moyuta  IMM=VII+to VIII at Cuilapa  IMM=VII at Cuajiquinilapa  IMM=VI at Mataescuintla, San Rafael and Las Casillas  Ms=5.7-6.0  SS= Cortical failing  D=10km  EP= 14.20°N-90.41°W</p>
1870-6-12 15:00	Chiquimulilla	E	<p>IMM=VIII at Chiquimulilla  IMM=VII+ at Santa Rosa  IMM=VII at Cuilapa, Ixtahuatán, Los Esclavos, Jutiapa  EP=14.16°N-90.16°W  Mag=6.0-6.5  Aftershocks continued until the 23d.</p>
1870-07-28 12:00 M	Guatemala	E	
1873-07-21 4:00 AM	Guatemala City,	E	Relatively strong earthquake mainly felt in Guatemala city, and also in Alotenango, Amatitlán, and Antigua
1874-9-3 21:00	South Region	E, L	<p>IMM=VIII-IX at Dueñas  IMM=VIII at Acatenango, Parramos  IMM=VII+ at Chimaltenango, El Tejar, Zaragoza  IMM=VII at Antigua, Patzicia, Itzapa, Patzún, Ciudad Vieja, Alotenango, Balanya  IMM=VI+ at Escuintla  IMM=VI at Ciudad Guatemala  Ms=6.0-6.5  ML=5.9-6.2  EP= 14.50°N-90.83°W  Antigua, Chimaltenango and Patzicia were destroyed and 200 people killed.  Considering the earthquake was produced in rainy season, it is worthy to mention that many landslides were triggered, and then they also produced floods when closed the river beds.</p>
1878	V. Tacaná	V	
1879-10	Guatemala	E	
1880-01-11	Guatemala	E	
1880	V. de Fuego	V	