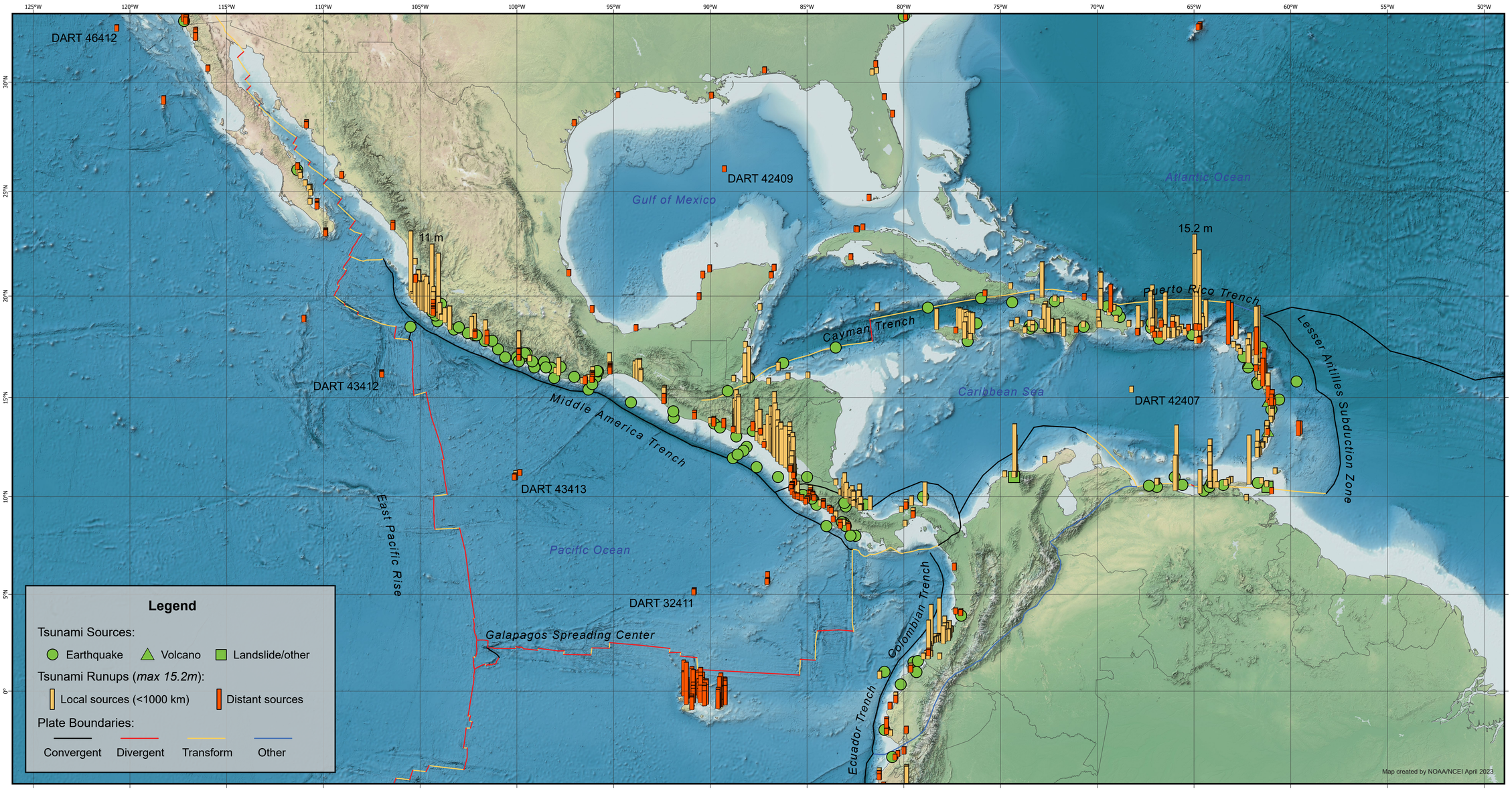
Historical Tsunamis (1530 to 2023) Caribbean, Central America, Mexico and Adjacent Regions



NOAA's National Centers for Environmental Information (NCEI) and co-located World Data Service (WDS) for Geophysics and the International Tsunami Information Center (ITIC), a UNESCO/IOC-NOAA partnership, have collaborated to produce a map showing the tsunami hazard for Caribbean, Central America, Mexico and Adjacent Regions. The information comes from the NCEI/WDS Historical Tsunami Database that includes information on tsunami source events throughout the world that range from 1610 B.C. to March A.D. 2023.

Forty-five tsunamis in the region caused damage ranging from a few shipping crafts to the destruction of entire towns. Nineteen resulted in almost 6,500 deaths. The most deadly was the 1692 Jamaica tsunami that resulted in 2,000 deaths at Port Royal. The 1946 Dominican Republic earthquake-generated tsunami caused 1,790 deaths in Mantanzas. In 1906 an earthquake off the coast of Ecuador generated a tsunami that caused 1,000 deaths in Colombia, and was observed along the entire coast of Central America, in Mexico, and in California.

A total of 72 confirmed tsunami source events are displayed on the Pacific region of this map; 69 were generated by earthquakes, and 3 from an earthquake-generated landslide. There are over 850 runup records (locations where tsunami waves were observed by eyewitnesses, field reconnaissance surveys, tide gauges, or deep-ocean sensors) displayed on the Pacific region. The runups include data from 43 tsunami sources beyond the map boundaries, mostly originated from Alaska, Chile, New Zealand, Peru and Russia. The highest runup on the displayed Pacific region was the 11 m tsunami wave generated by the 1995 Jalisco-Colima earthquake.

A total of 58 confirmed tsunami source events are displayed in the Caribbean Sea and Atlantic Ocean; 42 were generated by earthquakes, 7 from earthquake-generated landslides, 5 from volcanoes, 2 from volcano generated landslides, 1 from a mud volcano, and 1 from a submarine landslide. Approximately 400 runup records are displayed on the Caribbean Sea, Atlantic Ocean and Gulf of Mexico. In this area, the highest runup was the 15.2 m tsunami wave generated by violent back-to-back earthquakes southwest of St. Thomas, U.S. Virgin Islands, in 1867. Only 7 events beyond the map boundaries resulted in runups to the displayed Caribbean, Atlantic and Gulf of Mexico coastlines.

Table 1. Tsunamis Causing Deaths in the Caribbean Islands

Date					Estimated Dead
Year	Mon	Day	Source Location	Locations that reported casualties	or Missing
1530	9	1	Venezuela	Gulf of Cariaco, Venezuela	4
1692	6	7	Jamaica	Port Royal, Jamaica	2000
1842	5	7	Haiti	Port-de-Paix, Haiti	300
1867	11	18	Virgin Islands (USA)	Virgin Islands (USA)	24
1918	10	11	Puerto Rico (USA)	Puerto Rico (USA)	140
1946	8	4	Dominican Republic	Matanzas, Dominican Republic	1790
1946	8	8	Dominican Republic	Santo Domingo, Dominican Republic	75
2010	1	12	Haiti	Petit Paradis, Haiti	7

Table 2. Tsunamis Causing Deaths in Central America, Colombia, Ecuador and Mexico

Date					Estimated Dead
Year	Mon	Day	Source Location	Locations that reported casualties	or Missing
1787	3	28	Mexico	Oaxaca, Mexico	11
1882	9	7	Panama*	San Blas, Panama	100
1902	2	26	El Salvador	El Salvador	185
1906	1	31	Ecuador	Colombia	^1000
1932	6	3	Mexico	Jalisco, Mexico	4
1932	6	22	Mexico	Cuyutlan, Mexico	75
1958	1	19	Ecuador	Esmeraldas, Ecuador	4
1979	12	12	Colombia	Tumaco, Colombia	^600
1991	4	22	Costa Rica*	Canal de el Matina, Costa Rica	3
1992	9	2	Nicaragua	Nicaragua	170
1995	10	9	Mexico	Barra de Navidad, Mexico	1

*Caribbean coast
^May include earthquake deaths

Table 3. Tsunami Runups in the Caribbean Islands (including Venezuela)

	Maximum Runup Height (m)		Total
Location	Tide Gauge	Eyewitness & Field Survey	Number of Runups
Antigua and Barbuda	0.15	3.7	9
Barbados	0.23	1.5	5
Bermuda (UK)	0.12	^OBS	6
British Virgin Islands (UK)	-	3.6	4
Cayman Islands (UK)	0.26	-	2
Cuba	-	^OBS	7
Dominica	0.06	3.7	6
Dominican Republic	0.09	5.0	17
Grenada	-	3.1	8
Guadeloupe (France)	0.31	10.0	26
Haiti	0.02	5.0	37
Jamaica	-	2.5	15
Martinique (France)	0.3	4.0	16
Montserrat	-	4.0	4
Puerto Rico (USA)	0.66	6.1	44
Saba (Netherlands)	-	6.4	2
Saint Barthelemy (France)	-	2.1	2
Saint Kitts and Nevis	-	^OBS	3
Saint Lucia	-	1.2	5
Saint Martin (France & Netherlands)	-	4.5	2
Saint Vincent and The Grenadines	0.05	1.8	7
Sint Eustatius (Netherlands)	-	^OBS	1
Trinidad and Tobago	0.06	^OBS	4
Venezuela	0.08	10.0	26
Virgin Islands (USA)	0.09	15.2	31

^Unknown runup height

Table 4. Tsunami Runups in Central America, Colombia, Ecuador, and Mexico

	Pacific			Caribbean†		
	Maximum Runup Height (m)		Total	Maximum Runup Height (m)		Total
Location	Tide Gauge	Eyewitness & Field Survey	Number of Runups	Tide Gauge	Eyewitness & Field Survey	Number of Runups
Belize**	-	-	-	0.02	-	2
Colombia	0.25	6.0	54	0.25	8.0	7
Costa Rica	0.59	7.3	105	-	3.0	30
Ecuador***	2.26	6.1	234	-	-	-
El Salvador***	0.58	6.3	57	-	-	-
Guatemala	0.49	-	5	-	4.0	3
Honduras	-	^OBS	2	0.12	5.0	7
Mexico	1.76	10.9	296	0.18	-	14
Nicaragua	0.40	9.9	68	-	-	-
Panama	0.70	^OBS	11	0.62	3.0	26

**No Pacific coastline
***No Caribbean coastline
†Gulf of Mexico included for Mexico
^Unknown runup height

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