

Pacific Tsunami Warning Center Enhanced Products for the CARIBE-EWS for CARIBE WAVE 2013

ZCZC
WECA41 PHEB 201302
TSUCAX

TSUNAMI MESSAGE NUMBER 1
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
1302 UCT WED MAR 20 2013

...TSUNAMI THREAT MESSAGE...

THIS MESSAGE IS FOR ALL COASTAL AREAS OF THE CARIBBEAN AND ITS ADJACENT SEAS EXCEPT THOSE OF PUERTO RICO AND THE VIRGIN ISLANDS. IT IS ISSUED AS ADVICE IN SUPPORT OF THE UNESCO/IOC TSUNAMI AND OTHER COASTAL HAZARDS WARNING SYSTEM FOR THE CARIBBEAN AND ADJACENT REGIONS - CARIBE-EWS.

TSUNAMI THREAT FORECAST

* MORE THAN 3 METERS - TSUNAMI WAVES REACHING 3 METERS OR MORE ABOVE THE NORMAL TIDE ARE FORECAST FOR COASTS IN

COLOMBIA... DOMINICAN REPUBLIC... HAITI... ARUBA...
CURACAO... BONAIRE... AND VENEZUELA.

* 1 TO 3 METERS - TSUNAMI WAVES REACHING 1 TO 3 METERS ABOVE THE NORMAL TIDE ARE FORECAST FOR COASTS IN

COSTA RICA... CUBA... NICARAGUA... PANAMA... ANGUILLA...
DOMINICA... GRENADA... GUADELOUPE... JAMAICA... MARTINIQUE...
MONTSERRAT... SAINT KITTS AND NEVIS... SAINT LUCIA... SINT
MAARTEN... SABA AND SINT EUSTATIUS... SAINT MARTIN... AND SAINT
VINCENT AND THE GRENADINES.

* 0.3 TO 1 METERS - TSUNAMI WAVES REACHING 0.3 TO 1 METERS ABOVE THE NORMAL TIDE ARE FORECAST FOR COASTS IN

ANTIGUA AND BARBUDA... BAHAMAS... BARBADOS... BERMUDA...
CAYMAN ISLANDS... SAINT BARTHELEMY... TRINIDAD AND TOBAGO... AND
TURKS AND CAICOS ISLANDS.

Pacific Tsunami Warning Center Enhanced Products for the CARIBE-EWS for CARIBE WAVE 2013

* LESS THAN 0.3 METERS - TSUNAMI WAVES LESS THAN 0.3 METERS ABOVE THE NORMAL TIDE ARE FORECAST FOR COASTS IN

BRAZIL... GUYANA... HONDURAS... GUATEMALA... MEXICO...
SURINAME... BELIZE... AND FRENCH GUIANA.

EVALUATION

* AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 8.5 OCCURRED IN THE CARIBBEAN SEA AT 1300 UTC ON WEDNESDAY MARCH 20 2013.

* BASED ON THE PRELIMINARY SEISMIC PARAMETERS... HAZARDOUS TSUNAMI WAVES ARE FORECAST FOR SOME COASTS.

RECOMMENDED ACTIONS

* GOVERNMENT AGENCIES RESPONSIBLE FOR THREATENED COASTAL AREAS SHOULD TAKE ACTION TO INFORM AND INSTRUCT ANY COASTAL POPULATIONS AT RISK IN ACCORDANCE WITH THEIR OWN EVALUATION... PROCEDURES AND THE LEVEL OF THREAT.

* PERSONS LOCATED IN THREATENED COASTAL AREAS SHOULD STAY ALERT FOR INFORMATION AND FOLLOW INSTRUCTIONS FROM LOCAL AUTHORITIES.

ESTIMATED TIMES OF ARRIVAL

* ESTIMATED TIMES OF ARRIVAL -ETA- OF THE INITIAL TSUNAMI WAVE ARE GIVEN BELOW. ACTUAL ARRIVAL TIMES MAY DIFFER AND THE INITIAL WAVE MAY NOT BE THE LARGEST. A TSUNAMI IS A SERIES OF WAVES AND THE TIME BETWEEN WAVES CAN BE FIVE MINUTES TO ONE HOUR.

LOCATION	REGION	COORDINATES	ETA(UTC)
ORANJESTAD	ARUBA	12.5N 70.0W	1317 03/20
ONIMA	BONAIRE	12.3N 68.3W	1325 03/20
WILLEMSTAD	CURACAO	12.1N 68.9W	1348 03/20
JACAMEL	HAITI	18.1N 72.5W	1351 03/20

Pacific Tsunami Warning Center Enhanced Products for the CARIBE- EWS for CARIBE WAVE 2013

SANTO DOMINGO DOMINICAN REP 18.5N 69.9W 1353 03/20
MAIQUETIA VENEZUELA 10.6N 67.0W 1402 03/20
SANTA MARTA COLOMBIA 11.2N 74.2W 1405 03/20
CABO ENGANO DOMINICAN REP 18.6N 68.3W 1409 03/20
SABA SABA 17.6N 63.2W 1421 03/20
CARTAGENA COLOMBIA 10.4N 75.6W 1421 03/20
BASSETERRE SAINT KITTS 17.3N 62.7W 1422 03/20
PLYMOUTH MONTSEERRAT 16.7N 62.2W 1423 03/20
JEREMIE HAITI 18.6N 74.1W 1423 03/20
BASSE TERRE GUADELOUPE 16.0N 61.7W 1425 03/20
SINT EUSTATIUS SINT EUSTATIUS 17.5N 63.0W 1425 03/20
ROSEAU DOMINICA 15.3N 61.4W 1426 03/20
CASTRIES SAINT LUCIA 14.0N 61.0W 1428 03/20
KINGSTOWN SAINT VINCENT 13.1N 61.2W 1429 03/20
BARRANQUILLA COLOMBIA 11.1N 74.9W 1430 03/20
SIMPSON BAAI SINT MAARTEN 18.0N 63.1W 1430 03/20
SANTIAGO D CUBA CUBA 19.9N 75.8W 1430 03/20
FORT DE FRANCE MARTINIQUE 14.6N 61.1W 1433 03/20
RIOHACHA COLOMBIA 11.6N 72.9W 1433 03/20
CUMANA VENEZUELA 10.5N 64.2W 1435 03/20
PUERTO PLATA DOMINICAN REP 19.8N 70.7W 1435 03/20
THE VALLEY ANGUILLA 18.3N 63.1W 1438 03/20
SAINT GEORGES GRENADA 12.0N 61.8W 1438 03/20
ALIGANDI PANAMA 9.2N 78.0W 1442 03/20
BARACOA CUBA 20.4N 74.5W 1446 03/20
GRAND TURK TURKS N CAICOS 21.5N 71.1W 1446 03/20
PUERTO CARRETO PANAMA 8.8N 77.6W 1449 03/20
GREAT INAGUA BAHAMAS 20.9N 73.7W 1452 03/20
CAP HAITEN HAITI 19.8N 72.2W 1452 03/20
BRIDGETOWN BARBADOS 13.1N 59.6W 1455 03/20
KINGSTON JAMAICA 17.9N 76.9W 1455 03/20
SAINT BARTHELEM SAINT BARTHELEMY 17.9N 62.8W 1457 03/20
CAYMAN ISLANDS CAYMAN BRAC 19.7N 79.9W 1459 03/20
PUERTO OBALDIA PANAMA 8.7N 77.4W 1501 03/20
WEST CAICOS TURKS N CAICOS 21.7N 72.5W 1502 03/20
MAYAGUANA BAHAMAS 22.3N 73.0W 1502 03/20
SAINT JOHNS ANTIGUA 17.1N 61.9W 1502 03/20
PUNTA CARIBANA COLOMBIA 8.6N 76.9W 1505 03/20
PALMETTO POINT BARBUDA 17.6N 61.9W 1505 03/20
GIBARA CUBA 21.1N 76.1W 1505 03/20
MONTEGO BAY JAMAICA 18.5N 77.9W 1507 03/20
BAIE BLANCHE SAINT MARTIN 18.1N 63.0W 1508 03/20
CAYMAN ISLANDS GRAND CAYMAN 19.3N 81.3W 1515 03/20
SAN SALVADOR BAHAMAS 24.1N 74.5W 1518 03/20
PIRATES BAY TRINIDAD TOBAGO 11.3N 60.6W 1521 03/20

Pacific Tsunami Warning Center Enhanced Products for the CARIBE-EWS for CARIBE WAVE 2013

PUERTO LIMON	COSTA RICA	10.0N	83.0W	1521	03/20
CIENFUEGOS	CUBA	22.0N	80.5W	1523	03/20
COLON	PANAMA	9.4N	79.9W	1523	03/20
LONG ISLAND	BAHAMAS	23.3N	75.1W	1525	03/20
PORT AU PRINCE	HAITI	18.5N	72.4W	1526	03/20
EXUMA	BAHAMAS	23.6N	75.9W	1534	03/20
BOCAS DEL TORO	PANAMA	9.4N	82.2W	1535	03/20
CAT ISLAND	BAHAMAS	24.4N	75.5W	1535	03/20
CROOKED ISLAND	BAHAMAS	22.7N	74.1W	1536	03/20
ELEUTHERA ISLAN	BAHAMAS	25.2N	76.1W	1541	03/20
PUNTO FIJO	VENEZUELA	11.7N	70.2W	1542	03/20
ANDROS ISLAND	BAHAMAS	25.0N	77.9W	1550	03/20
PORT OF SPAIN	TRINIDAD TOBAGO	10.6N	61.5W	1553	03/20
RUTHS BAY	BERMUDA	32.4N	64.6W	1600	03/20
NASSAU	BAHAMAS	25.1N	77.4W	1602	03/20
PUNTA GORDA	NICARAGUA	11.4N	83.8W	1614	03/20
FREEPORT	BAHAMAS	26.5N	78.8W	1614	03/20
ABACO ISLAND	BAHAMAS	26.6N	77.1W	1618	03/20
BIMINI	BAHAMAS	25.8N	79.3W	1627	03/20
GOLFO VENEZUELA	VENEZUELA	11.4N	71.2W	1641	03/20
SANTA CRZ D SUR	CUBA	20.7N	78.0W	1746	03/20
PORLAMAR	VENEZUELA	10.9N	63.8W	1759	03/20
NUEVA GERONA	CUBA	21.9N	82.8W	1923	03/20
PUERTO CABEZAS	NICARAGUA	14.0N	83.4W	1944	03/20

POTENTIAL IMPACTS

- * TSUNAMI WAVES OF MORE THAN 3 METERS ARE CAPABLE OF CAUSING ALMOST COMPLETE DESTRUCTION OF COASTAL STRUCTURES AND INFRASTRUCTURE IN LOW-LYING COASTAL AREAS.
- * TSUNAMI WAVES OF 1 TO 3 METERS ARE CAPABLE OF FLOODING AND DAMAGING STRUCTURES AND INFRASTRUCTURE IN LOW-LYING COASTAL AREAS.
- * TSUNAMI WAVES OF 0.3 TO 1 METER MAY CAUSE STRONG AND UNUSUAL OCEAN CURRENTS AND MINOR FLOODING OF BEACH AND HARBOR AREAS.
- * TSUNAMI WAVES OF LESS THAN 0.3 METER ARE GENERALLY NOT A HAZARD.
- * PERSONS CAUGHT IN THE WATER OF A TSUNAMI MAY DROWN... BE CRUSHED BY DEBRIS IN THE WATER... OR BE SWEEPED OUT TO SEA.

Pacific Tsunami Warning Center Enhanced Products for the CARIBE-EWS for CARIBE WAVE 2013

- * A TSUNAMI IS A SERIES OF WAVES. THE TIME BETWEEN WAVE CRESTS CAN VARY FROM 5 MINUTES TO AN HOUR. THE HAZARD MAY PERSIST FOR MANY HOURS OR LONGER AFTER THE INITIAL WAVE.
- * IMPACTS CAN VARY SIGNIFICANTLY FROM ONE SECTION OF COAST TO THE NEXT DUE TO LOCAL BATHYMETRY AND THE SHAPE AND ELEVATION OF THE SHORELINE.
- * IMPACTS CAN ALSO VARY DEPENDING UPON THE STATE OF THE TIDE AT THE TIME OF THE MAXIMUM TSUNAMI WAVES.

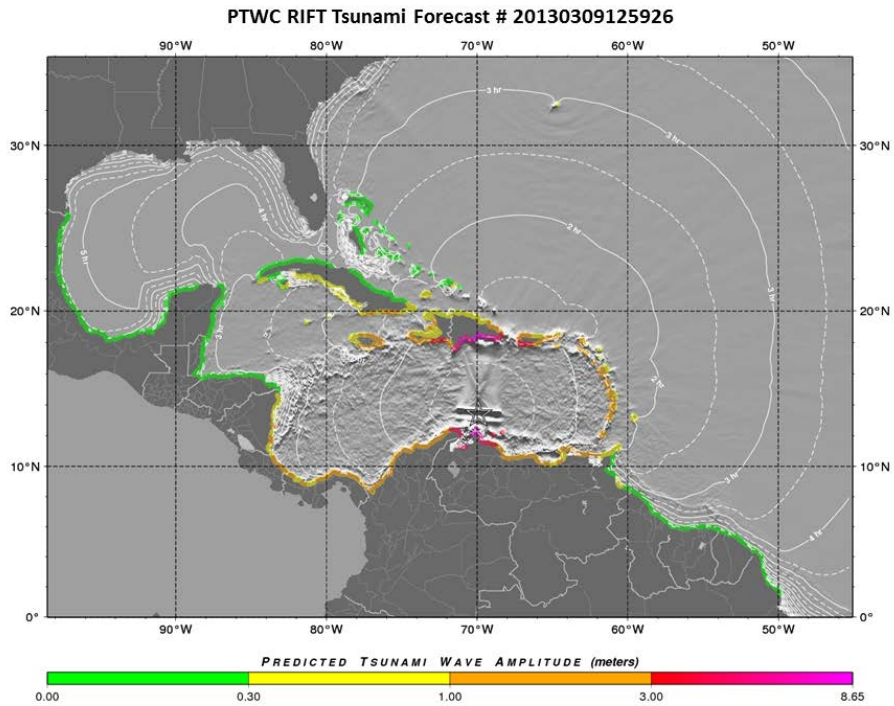
PRELIMINARY EARTHQUAKE PARAMETERS

- * MAGNITUDE 8.5
- * ORIGIN TIME 1300 UTC MAR 20 2013
- * COORDINATES 13.4 NORTH 69.9 WEST
- * DEPTH 20 KM / 12 MILES
- * LOCATION CARIBBEAN SEA

NEXT UPDATE AND ADDITIONAL INFORMATION

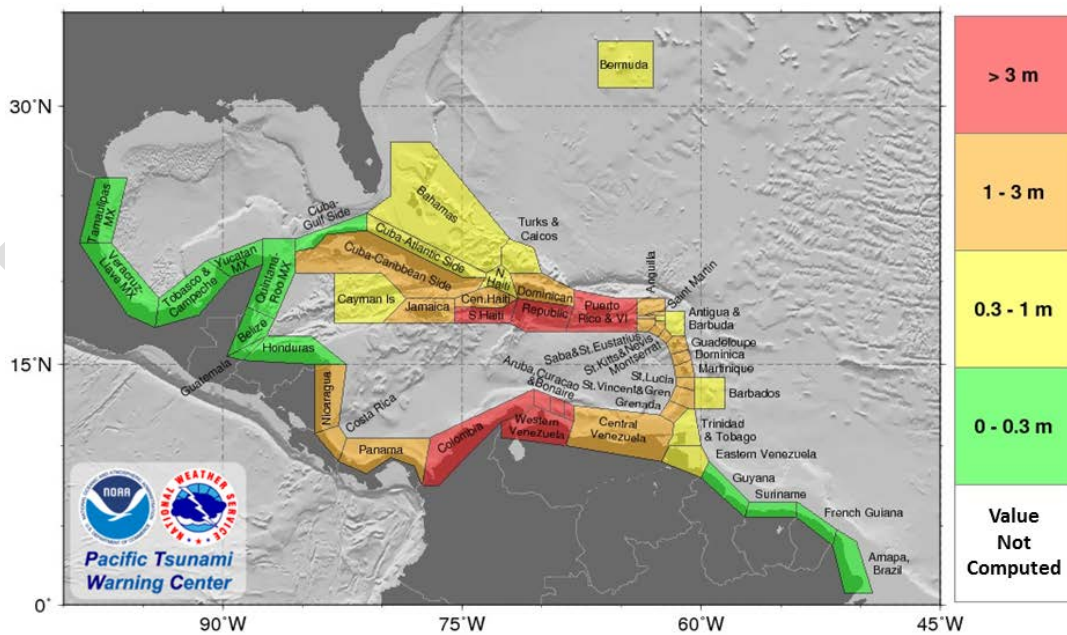
- * THE NEXT MESSAGE WILL BE ISSUED IN ONE HOUR... OR SOONER IF THE SITUATION WARRANTS.
- * AUTHORITATIVE INFORMATION ABOUT THE EARTHQUAKE FROM THE U.S. GEOLOGICAL SURVEY CAN BE FOUND ON THE INTERNET AT EARTHQUAKE.USGS.GOV/EARTHQUAKES/MAP.
- * FURTHER INFORMATION ABOUT THIS EVENT MAY BE FOUND AT PTWC.WEATHER.GOV AND AT WWW.TSUNAMI.GOV.
- * COASTAL REGIONS OF PUERTO RICO AND THE VIRGIN ISLANDS SHOULD REFER TO WEST COAST AND ALASKA TSUNAMI WARNING CENTER MESSAGES THAT CAN BE FOUND AT WCATWC.ARH.NOAA.GOV.

Pacific Tsunami Warning Center Enhanced Products for the CARIBE-EWS for CARIBE WAVE 2013



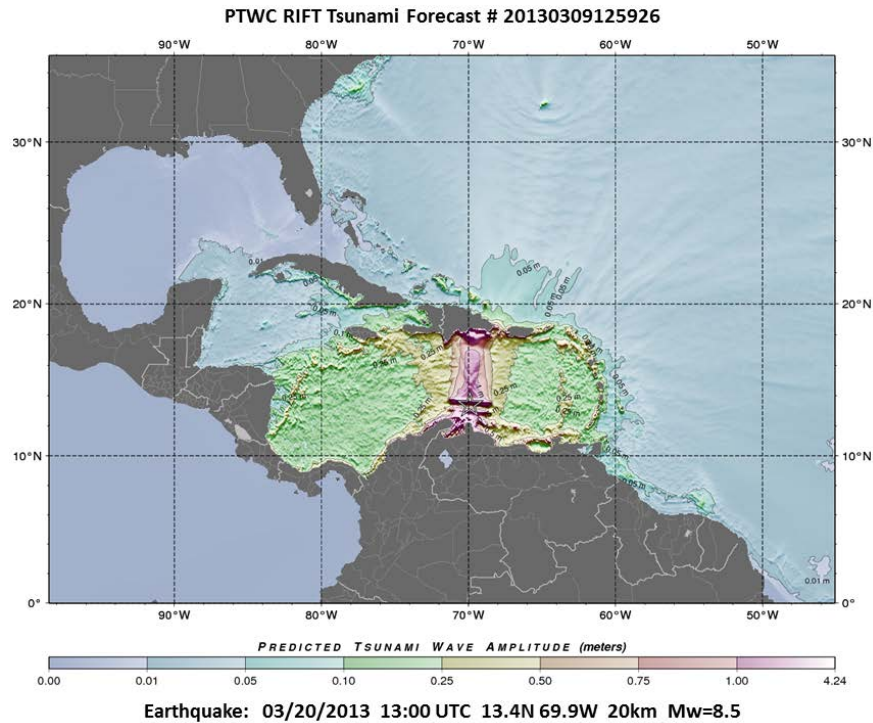
Earthquake: 03/20/2013 13:00 UTC 13.4N 69.9W 20km Mw=8.5

PTWC RIFT Tsunami Forecast #20130309125926



Earthquake: 03/20/2013 13:00 UTC 13.4N 69.9W 20km Mw=8.5

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PTWC RIFT Tsunami Forecast Model - Run ID: 2013030912592

Earthquake - Origin: 03/20/2013 13:00:00 UTC Coordinates: 13.4N 69.9W Depth: 020km Magnitude: 8.5

Coastal Forecast (meters)				Offshore Forecast (meters)				Total	Points	Region Name
Maximum	Mean	Median	STD	Maximum	Mean	Median	STD			
8.65	5.99	6.37	1.65	4.30	2.24	2.14	0.91	62	Caribbean Coast of Dominican Republic	
8.04	4.53	4.49	1.81	3.30	1.70	1.75	0.71	45	Western Coast of Venezuela	
7.50	7.50	7.50	0.00	1.73	1.73	1.73	0.00	1	Aruba	
4.75	1.90	1.68	0.97	1.89	0.71	0.65	0.40	120	Caribbean Coast of Colombia	
3.99	3.99	3.99	0.00	1.78	1.78	1.78	0.00	1	Curacao	
3.66	3.66	3.66	0.00	1.45	1.45	1.45	0.00	1	Bonaire	
3.62	1.87	1.58	0.91	1.78	0.68	0.46	0.40	80	Puerto Rico and Virgin Islands	
3.27	2.62	2.62	0.41	1.29	0.69	0.69	0.21	43	Caribbean Coast of Haiti	
2.42	1.28	1.10	0.52	1.32	0.45	0.32	0.28	69	Jamaica	
2.19	1.34	1.23	0.40	1.38	0.54	0.49	0.28	115	Central Coast of Venezuela	
1.89	1.31	1.36	0.37	0.78	0.38	0.31	0.16	10	Saint Vincent and the Grenadines	
1.84	1.26	1.33	0.39	0.96	0.45	0.42	0.21	19	Martinique	
1.81	1.37	1.40	0.35	0.71	0.43	0.42	0.14	17	Guadeloupe	
1.74	1.20	1.11	0.30	1.04	0.40	0.37	0.20	82	Caribbean Coast of Panama	
1.72	1.32	1.57	0.37	1.40	0.60	0.52	0.29	13	Saint Lucia	
1.68	0.80	0.70	0.43	2.17	0.45	0.28	0.42	59	Atlantic Coast of Dominican Republic	
1.63	1.63	1.63	0.00	0.34	0.34	0.34	0.00	1	Montserrat	
1.58	1.21	1.24	0.32	0.63	0.41	0.35	0.12	10	Grenada	

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1.55	1.34	1.34	0.17	0.96	0.55	0.55	0.18	9	Dominica
1.38	1.38	1.38	0.00	0.40	0.40	0.40	0.00	1	Saint_Kitts_and_Nevis
1.24	1.04	1.05	0.10	0.54	0.27	0.23	0.13	23	Caribbean_Coast_of_Costa_Rica
1.21	1.21	1.21	0.00	0.90	0.90	0.90	0.00	1	Sint_Maarten
1.21	1.21	1.21	0.00	0.39	0.33	0.33	0.06	2	Saba_and_Sint_Eustatius
1.21	0.94	0.94	0.26	0.68	0.57	0.57	0.11	2	Saint_Martin
1.17	0.92	0.92	0.25	0.55	0.44	0.44	0.11	2	Anguilla
1.13	0.55	0.46	0.27	0.52	0.16	0.13	0.12	185	Caribbean_Coast_of_Cuba
1.12	0.89	0.88	0.14	0.24	0.11	0.10	0.04	59	Caribbean_Coast_of_Nicaragua
1.06	0.76	0.75	0.20	0.59	0.26	0.23	0.12	71	Gulf_of_Gonave_Coast_of_Haiti
0.71	0.53	0.51	0.11	0.47	0.27	0.29	0.13	9	Barbados
0.69	0.64	0.64	0.05	0.69	0.63	0.63	0.06	2	Antigua_and_Barbuda
0.68	0.40	0.32	0.12	0.34	0.15	0.14	0.05	30	Atlantic_Coast_of_Haiti
0.67	0.67	0.67	0.00	0.71	0.71	0.71	0.00	1	Saint_Barthelemy
0.58	0.39	0.45	0.16	0.35	0.18	0.16	0.07	34	Trinidad_and_Tobago
0.56	0.56	0.56	0.00	0.17	0.17	0.17	0.00	1	Bermuda
0.49	0.11	0.09	0.09	0.22	0.05	0.03	0.04	198	Bahamas
0.44	0.42	0.42	0.03	0.13	0.11	0.11	0.01	2	Cayman_Islands
0.35	0.25	0.25	0.05	0.31	0.15	0.14	0.06	25	Turks_and_Caicos_Islands
0.34	0.13	0.12	0.09	0.16	0.05	0.04	0.04	87	Atlantic_Coast_of_Cuba
0.33	0.26	0.27	0.04	0.10	0.07	0.07	0.02	31	Atlantic_Coast_of_Venezuela
0.29	0.18	0.18	0.03	0.21	0.05	0.05	0.04	83	Caribbean_Coast_of_Honduras
0.27	0.22	0.22	0.02	0.07	0.05	0.05	0.01	49	Guyana
0.25	0.19	0.19	0.03	0.16	0.06	0.06	0.02	58	Quintana_Roo_Mexico
0.23	0.04	0.03	0.03	0.09	0.01	0.01	0.01	57	Gulf_of_Mexico_Coast_of_Cuba
0.21	0.18	0.17	0.03	0.07	0.04	0.03	0.01	47	Suriname
0.20	0.15	0.15	0.02	0.08	0.05	0.04	0.01	38	Belize
0.17	0.17	0.17	0.00	0.05	0.04	0.04	0.01	6	Caribbean_Coast_of_Guatemala
0.09	0.08	0.08	0.00	0.07	0.03	0.03	0.01	39	French_Guiana
0.08	0.07	0.07	0.00	0.03	0.01	0.01	0.01	53	Amapa_Brazil
0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.00	30	Yucatan_Mexico
0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	84	Veracruz-Llave_Mexico
0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	75	Tabasco_and_Campeche_Mexico
0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	59	Tamaulipas_Mexico
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	95	Pacific_Coast_of_Colombia
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	92	Pacific_Side_of_Panama
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7	Galapagos_Islands
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	70	Pacific_Coast_of_Costa_Rica
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	67	Oaxaca_Mexico
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	37	Pacific_Side_of_Nicaragua
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	37	El_Salvador
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	32	Pacific_Coast_of_Guatemala
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	32	Ecuador
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	28	Chiapas_Mexico
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1	Guerrero_Mexico

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TSUNAMI MESSAGE NUMBER 2
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1330 UCT WED MAR 20 2013

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LOCATION	REGION	COORDINATES	ETA(UTC)
ORANJESTAD	ARUBA	12.5N 70.0W	1317 03/20
ONIMA	BONAIRE	12.3N 68.3W	1325 03/20
WILLEMSTAD	CURACAO	12.1N 68.9W	1348 03/20
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SABA SABA 17.6N 63.2W 1421 03/20
CARTAGENA COLOMBIA 10.4N 75.6W 1421 03/20
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WEST CAICOS TURKS N CAICOS 21.7N 72.5W 1502 03/20
MAYAGUANA BAHAMAS 22.3N 73.0W 1502 03/20
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PUNTA CARIBANA COLOMBIA 8.6N 76.9W 1505 03/20
PALMETTO POINT BARBUDA 17.6N 61.9W 1505 03/20
GIBARA CUBA 21.1N 76.1W 1505 03/20
MONTEGO BAY JAMAICA 18.5N 77.9W 1507 03/20
BAIE BLANCHE SAINT MARTIN 18.1N 63.0W 1508 03/20
CAYMAN ISLANDS GRAND CAYMAN 19.3N 81.3W 1515 03/20
SAN SALVADOR BAHAMAS 24.1N 74.5W 1518 03/20
PIRATES BAY TRINIDAD TOBAGO 11.3N 60.6W 1521 03/20

Pacific Tsunami Warning Center Enhanced Products for the CARIBE-EWS for CARIBE WAVE 2013

PUERTO LIMON	COSTA RICA	10.0N	83.0W	1521	03/20
CIENFUEGOS	CUBA	22.0N	80.5W	1523	03/20
COLON	PANAMA	9.4N	79.9W	1523	03/20
LONG ISLAND	BAHAMAS	23.3N	75.1W	1525	03/20
PORT AU PRINCE	HAITI	18.5N	72.4W	1526	03/20
EXUMA	BAHAMAS	23.6N	75.9W	1534	03/20
BOCAS DEL TORO	PANAMA	9.4N	82.2W	1535	03/20
CAT ISLAND	BAHAMAS	24.4N	75.5W	1535	03/20
CROOKED ISLAND	BAHAMAS	22.7N	74.1W	1536	03/20
ELEUTHERA ISLAN	BAHAMAS	25.2N	76.1W	1541	03/20
PUNTO FIJO	VENEZUELA	11.7N	70.2W	1542	03/20
ANDROS ISLAND	BAHAMAS	25.0N	77.9W	1550	03/20
PORT OF SPAIN	TRINIDAD TOBAGO	10.6N	61.5W	1553	03/20
RUTHS BAY	BERMUDA	32.4N	64.6W	1600	03/20
NASSAU	BAHAMAS	25.1N	77.4W	1602	03/20
COZUMEL	MEXICO	20.5N	87.0W	1612	03/20
PUNTA GORDA	NICARAGUA	11.4N	83.8W	1614	03/20
FREEPORT	BAHAMAS	26.5N	78.8W	1614	03/20
ABACO ISLAND	BAHAMAS	26.6N	77.1W	1618	03/20
BIMINI	BAHAMAS	25.8N	79.3W	1627	03/20
GOLFO VENEZUELA	VENEZUELA	11.4N	71.2W	1641	03/20
SANTA CRZ D SUR	CUBA	20.7N	78.0W	1746	03/20
PORLAMAR	VENEZUELA	10.9N	63.8W	1759	03/20
NUEVA GERONA	CUBA	21.9N	82.8W	1923	03/20
PUERTO CABEZAS	NICARAGUA	14.0N	83.4W	1944	03/20

POTENTIAL IMPACTS

- * TSUNAMI WAVES OF MORE THAN 3 METERS ARE CAPABLE OF CAUSING ALMOST COMPLETE DESTRUCTION OF COASTAL STRUCTURES AND INFRASTRUCTURE IN LOW-LYING COASTAL AREAS.
- * TSUNAMI WAVES OF 1 TO 3 METERS ARE CAPABLE OF FLOODING AND DAMAGING STRUCTURES AND INFRASTRUCTURE IN LOW-LYING COASTAL AREAS.
- * TSUNAMI WAVES OF 0.3 TO 1 METER MAY CAUSE STRONG AND UNUSUAL OCEAN CURRENTS AND MINOR FLOODING OF BEACH AND HARBOR AREAS.
- * TSUNAMI WAVES OF LESS THAN 0.3 METER ARE GENERALLY NOT A HAZARD.
- * PERSONS CAUGHT IN THE WATER OF A TSUNAMI MAY DROWN... BE

Pacific Tsunami Warning Center Enhanced Products for the CARIBE-EWS for CARIBE WAVE 2013

CRUSHED BY DEBRIS IN THE WATER... OR BE SWEEPED OUT TO SEA.

* A TSUNAMI IS A SERIES OF WAVES. THE TIME BETWEEN WAVE CRESTS CAN VARY FROM 5 MINUTES TO AN HOUR. THE HAZARD MAY PERSIST FOR MANY HOURS OR LONGER AFTER THE INITIAL WAVE.

* IMPACTS CAN VARY SIGNIFICANTLY FROM ONE SECTION OF COAST TO THE NEXT DUE TO LOCAL BATHYMETRY AND THE SHAPE AND ELEVATION OF THE SHORELINE.

* IMPACTS CAN ALSO VARY DEPENDING UPON THE STATE OF THE TIDE AT THE TIME OF THE MAXIMUM TSUNAMI WAVES.

TSUNAMI OBSERVATIONS

* THE FOLLOWING ARE TSUNAMI WAVE OBSERVATIONS FROM COASTAL AND/OR DEEP-OCEAN SEA LEVEL GAUGES AT THE INDICATED LOCATIONS. THE MAXIMUM TSUNAMI HEIGHT IS MEASURED WITH RESPECT TO THE NORMAL TIDE LEVEL.

GAUGE LOCATION	GAUGE COORDINATES LAT LON	TIME OF MEASURE (UTC)	MAXIMUM TSUNAMI HEIGHT	WAVE PERIOD (MIN)
DART 42407	15.3N 68.2W	1324	0.42M/ 1.4FT	20

PRELIMINARY EARTHQUAKE PARAMETERS

* MAGNITUDE 8.5
* ORIGIN TIME 1300 UTC MAR 20 2013
* COORDINATES 13.4 NORTH 69.9 WEST
* DEPTH 20 KM / 12 MILES
* LOCATION CARIBBEAN SEA

NEXT UPDATE AND ADDITIONAL INFORMATION

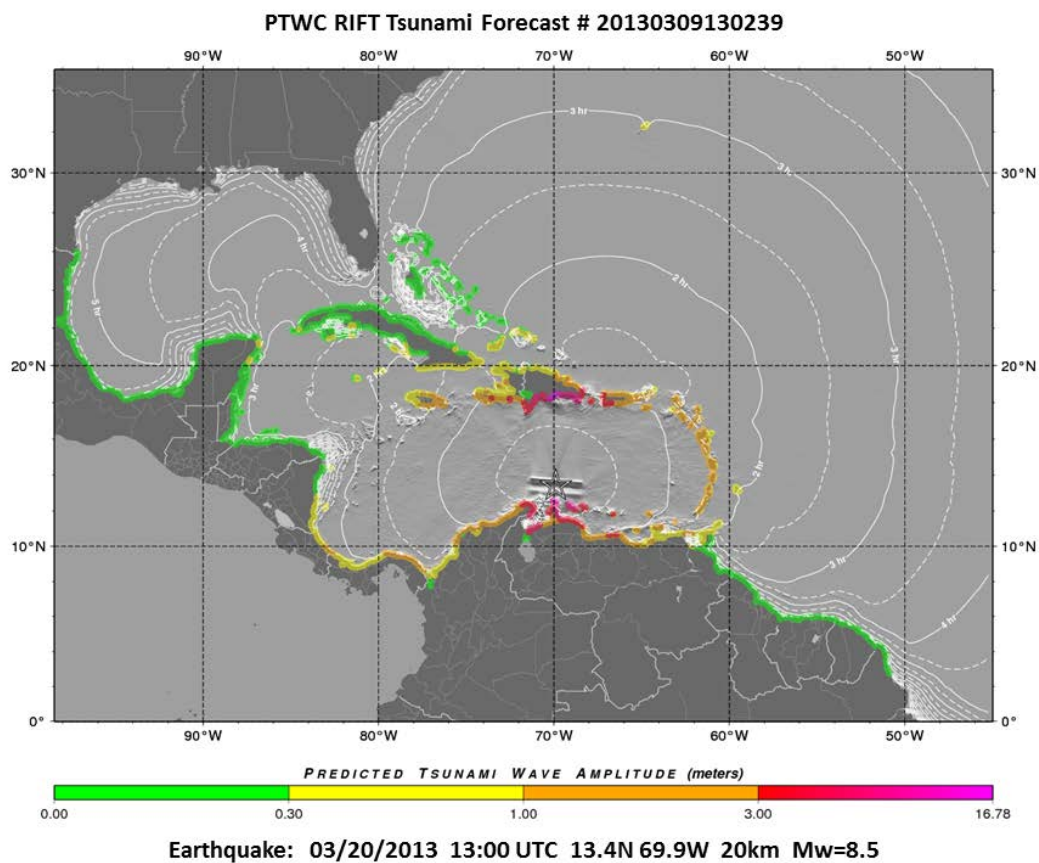
* THE NEXT MESSAGE WILL BE ISSUED IN ONE HOUR... OR SOONER IF THE SITUATION WARRANTS.

Pacific Tsunami Warning Center Enhanced Products for the CARIBE-EWS for CARIBE WAVE 2013

* AUTHORITATIVE INFORMATION ABOUT THE EARTHQUAKE FROM THE U.S. GEOLOGICAL SURVEY CAN BE FOUND ON THE INTERNET AT EARTHQUAKE.USGS.GOV/EARTHQUAKES/MAP.

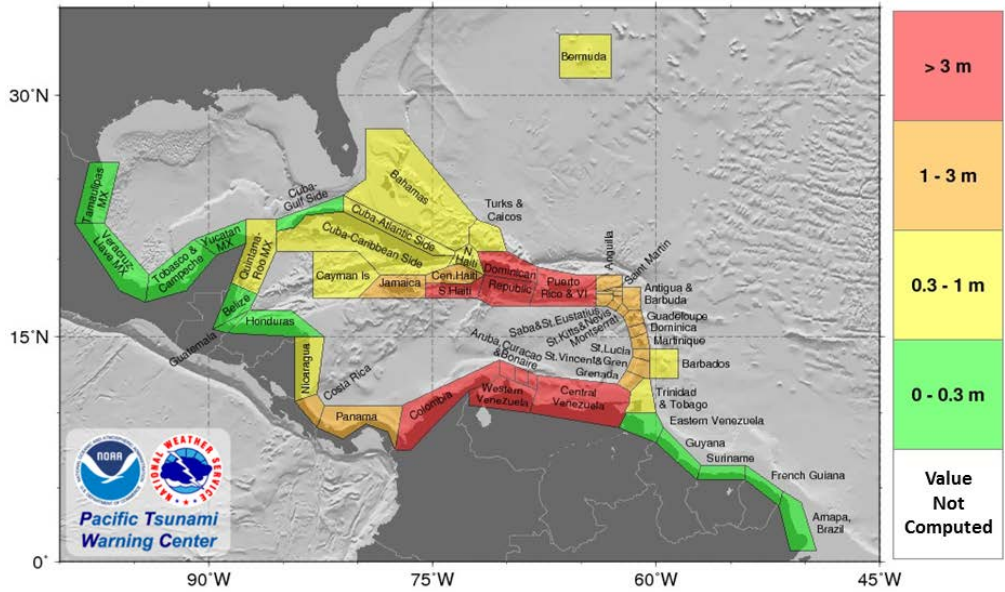
* FURTHER INFORMATION ABOUT THIS EVENT MAY BE FOUND AT PTWC.WEATHER.GOV AND AT WWW.TSUNAMI.GOV.

* COASTAL REGIONS OF PUERTO RICO AND THE VIRGIN ISLANDS SHOULD REFER TO WEST COAST AND ALASKA TSUNAMI WARNING CENTER MESSAGES THAT CAN BE FOUND AT WCATWC.ARH.NOAA.GOV.



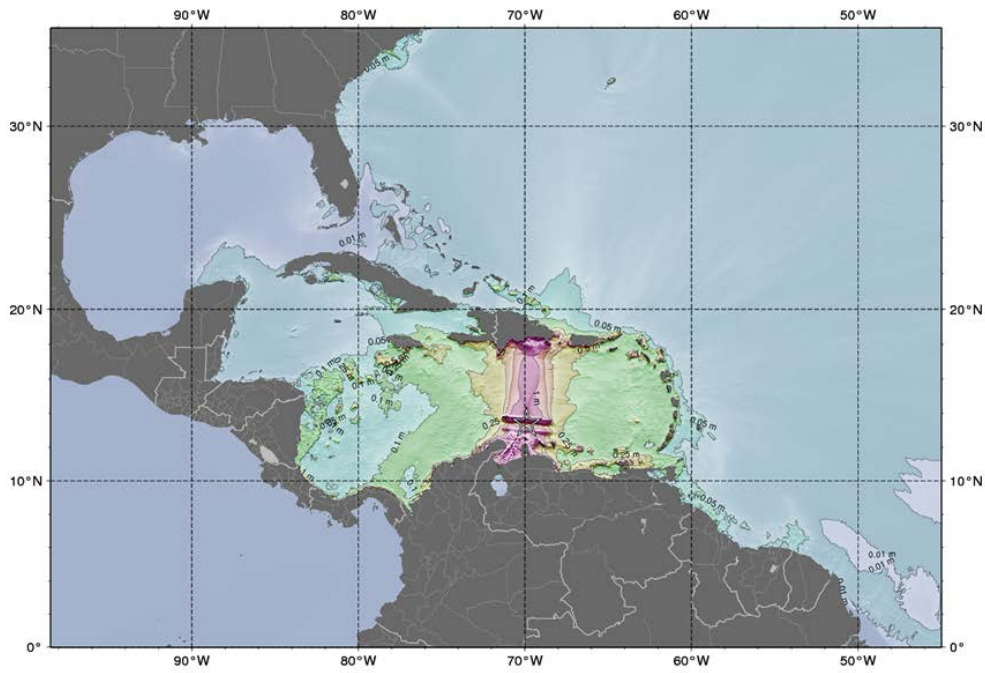
Pacific Tsunami Warning Center Enhanced Products for the CARIBE-EWS for CARIBE WAVE 2013

PTWC RIFT Tsunami Forecast #20130309130239



Earthquake: 03/20/2013 13:00 UTC 13.4N 69.9W 20km Mw=8.5

PTWC RIFT Tsunami Forecast # 20130309130239



Earthquake: 03/20/2013 13:00 UTC 13.4N 69.9W 20km Mw=8.5

Pacific Tsunami Warning Center Enhanced Products for the CARIBE-EWS for CARIBE WAVE 2013

PTWC RIFT Tsunami Forecast Model - Run ID: 2013030913023

Earthquake - Origin: 03/20/2013 13:00:00 UTC Coordinates: 13.4N 69.9W Depth: 020km Magnitude: 8.5

Coastal Forecast (meters)				Offshore Forecast (meters)				Total	Points	Region Name
Maximum	Mean	Median	STD	Maximum	Mean	Median	STD			
8.90	3.73	3.30	2.23	11.01	2.84	2.63	1.55	363	Western_Coast_of_Venezuela	
6.57	1.47	1.18	1.10	5.01	1.09	0.80	0.93	600	Caribbean_Coast_of_Colombia	
5.65	3.80	3.63	0.90	5.12	1.89	1.65	1.01	43	Bonaire	
4.84	1.02	0.76	0.85	3.21	0.66	0.39	0.66	257	Atlantic_Coast_of_Dominican_Republic	
4.67	2.04	2.03	0.69	3.32	0.96	0.85	0.48	211	Caribbean_Coast_of_Haiti	
4.64	1.72	1.49	0.85	4.38	1.13	0.83	0.76	421	Puerto_Rico_and_Virgin_Islands	
3.51	1.19	0.92	0.64	2.93	0.68	0.58	0.43	590	Central_Coast_of_Venezuela	
2.77	0.91	0.82	0.40	1.94	0.49	0.36	0.34	298	Jamaica	
2.23	1.26	1.29	0.36	1.78	0.63	0.60	0.28	89	Martinique	
2.22	1.29	1.26	0.38	2.94	0.76	0.62	0.56	72	Saint_Vincent_and_the_Grenadines	
2.16	1.27	1.23	0.43	1.84	0.75	0.68	0.34	56	Saint_Lucia	
2.16	1.17	1.35	0.48	1.20	0.66	0.63	0.23	52	Grenada	
2.02	1.26	1.32	0.44	1.92	0.79	0.61	0.47	58	Saint_Kitts_and_Nevis	
1.99	0.91	0.78	0.38	1.55	0.53	0.46	0.27	371	Caribbean_Coast_of_Panama	
1.76	1.02	0.88	0.29	0.74	0.41	0.42	0.15	21	Saba_and_Sint_Eustatius	
1.71	1.38	1.61	0.29	1.48	0.86	0.76	0.30	15	Anguilla	
1.69	1.01	0.98	0.28	1.74	0.55	0.50	0.29	164	Guadeloupe	
16.78	6.30	5.95	3.68	12.50	3.33	2.91	2.34	350	Caribbean_Coast_of_Dominican_Republic	
1.63	1.16	1.12	0.22	0.88	0.48	0.48	0.18	22	Montserrat	
1.46	1.04	1.04	0.20	0.68	0.38	0.36	0.12	63	Dominica	
13.43	8.10	6.64	3.32	5.10	2.95	2.84	1.00	28	Aruba	
1.30	0.87	0.94	0.28	1.25	0.65	0.69	0.27	64	Antigua_and_Barbuda	
1.21	1.21	1.21	0.00	1.56	1.29	1.26	0.21	5	Saint_Martin	
1.20	0.97	0.89	0.14	0.97	0.63	0.61	0.19	9	Sint_Maarten	
1.19	0.81	0.81	0.14	1.06	0.48	0.45	0.13	98	Caribbean_Coast_of_Costa_Rica	
1.17	0.61	0.58	0.14	1.20	0.25	0.21	0.14	337	Gulf_of_Gonave_Coast_of_Haiti	
1.13	0.93	1.02	0.20	0.97	0.63	0.60	0.13	10	Saint_Barthelemy	
10.80	5.76	4.67	2.53	6.98	2.34	1.91	1.36	61	Curacao	
0.93	0.35	0.34	0.22	0.82	0.21	0.18	0.14	232	Trinidad_and_Tobago	
0.92	0.27	0.22	0.22	0.78	0.11	0.09	0.09	1068	Caribbean_Coast_of_Cuba	
0.69	0.52	0.51	0.09	0.68	0.23	0.20	0.11	46	Barbados	
0.66	0.09	0.05	0.09	0.26	0.04	0.02	0.04	688	Atlantic_Coast_of_Cuba	
0.63	0.09	0.07	0.09	0.64	0.05	0.04	0.06	1435	Bahamas	
0.59	0.30	0.38	0.14	0.44	0.21	0.22	0.08	246	Caribbean_Coast_of_Nicaragua	
0.57	0.38	0.37	0.09	0.46	0.14	0.13	0.06	162	Atlantic_Coast_of_Haiti	

Pacific Tsunami Warning Center Enhanced Products for the CARIBE-EWS for CARIBE WAVE 2013

0.56	0.29	0.28	0.06	0.37	0.13	0.12	0.05	65	Cayman_Islands
0.54	0.38	0.35	0.10	0.31	0.17	0.15	0.06	26	Bermuda
0.52	0.26	0.25	0.11	0.62	0.13	0.10	0.09	145	Turks_and_Caicos_Islands
0.35	0.11	0.11	0.09	0.23	0.05	0.05	0.04	540	Quintana_Roo_Mexico
0.29	0.13	0.13	0.04	0.22	0.08	0.07	0.03	400	Caribbean_Coast_of_Honduras
0.22	0.13	0.12	0.05	0.22	0.10	0.09	0.04	215	Guyana
0.21	0.13	0.13	0.05	0.26	0.09	0.09	0.04	171	Atlantic_Coast_of_Venezuela
0.18	0.08	0.08	0.04	0.18	0.04	0.04	0.02	221	Belize
0.16	0.12	0.12	0.03	0.07	0.05	0.05	0.01	21	Caribbean_Coast_of_Guatemala
0.12	0.08	0.08	0.01	0.15	0.06	0.06	0.02	200	Suriname
0.12	0.08	0.07	0.03	0.13	0.04	0.03	0.02	128	French_Guiana
0.11	0.03	0.02	0.01	0.06	0.01	0.01	0.01	259	Gulf_of_Mexico_Coast_of_Cuba
0.08	0.03	0.03	0.03	0.05	0.01	0.01	0.01	181	Yucatan_Mexico
0.05	0.04	0.04	0.01	0.06	0.03	0.03	0.01	114	Amapa_Brazil
0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	15	Pacific_Coast_of_Honduras
0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	387	Veracruz-Llave_Mexico
0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	365	Tabasco_and_Campeche_Mexico
0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	159	Pacific_Side_of_Nicaragua
0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	136	El_Salvador
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	74	Galapagos_Islands
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	724	Pacific_Side_of_Panama
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	467	Pacific_Coast_of_Colombia
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	406	Pacific_Coast_of_Costa_Rica
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	300	Oaxaca_Mexico
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	268	Tamaulipas_Mexico
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	140	Ecuador
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	127	Pacific_Coast_of_Guatemala
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	113	Chiapas_Mexico

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TSUNAMI MESSAGE NUMBER 3
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
1420 UCT WED MAR 20 2013

...TSUNAMI THREAT MESSAGE...

THIS MESSAGE IS FOR ALL COASTAL AREAS OF THE CARIBBEAN AND ITS
ADJACENT SEAS EXCEPT THOSE OF PUERTO RICO AND THE VIRGIN
ISLANDS. IT IS ISSUED AS ADVICE IN SUPPORT OF THE UNESCO/IOC
TSUNAMI AND OTHER COASTAL HAZARDS WARNING SYSTEM FOR THE
CARIBBEAN AND ADJACENT REGIONS - CARIBE-EWS.

Pacific Tsunami Warning Center Enhanced Products for the CARIBE-EWS for CARIBE WAVE 2013

TSUNAMI THREAT FORECAST

* MORE THAN 3 METERS - TSUNAMI WAVES REACHING 3 METERS OR MORE ABOVE THE NORMAL TIDE ARE FORECAST FOR COASTS IN

COLOMBIA... DOMINICAN REPUBLIC... HAITI... ARUBA...
CURACAO... BONAIRE... AND VENEZUELA.

* 1 TO 3 METERS - TSUNAMI WAVES REACHING 1 TO 3 METERS ABOVE THE NORMAL TIDE ARE FORECAST FOR COASTS IN

COSTA RICA... PANAMA... ANGUILLA... ANTIGUA AND BARBUDA...
DOMINICA... GRENADA... GUADELOUPE... JAMAICA... MARTINIQUE...
MONTserrat... SAINT KITTS AND NEVIS... SAINT LUCIA... SINT
MAARTEN... SABA AND SINT EUSTATIUS... SAINT BARTHELEMY... SAINT
MARTIN... AND SAINT VINCENT AND THE GRENADINES.

* 0.3 TO 1 METERS - TSUNAMI WAVES REACHING 0.3 TO 1 METERS ABOVE THE NORMAL TIDE ARE FORECAST FOR COASTS IN

CUBA... MEXICO... NICARAGUA... BAHAMAS... BARBADOS...
BERMUDA... CAYMAN ISLANDS... TRINIDAD AND TOBAGO... AND TURKS
AND CAICOS ISLANDS.

* LESS THAN 0.3 METERS - TSUNAMI WAVES LESS THAN 0.3 METERS ABOVE THE NORMAL TIDE ARE FORECAST FOR COASTS IN

BRAZIL... GUYANA... HONDURAS... GUATEMALA... SURINAME...
BELIZE... AND FRENCH GUIANA.

EVALUATION

* AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 8.5 OCCURRED IN THE CARIBBEAN SEA AT 1300 UTC ON WEDNESDAY MARCH 20 2013.

* BASED ON THE PRELIMINARY SEISMIC PARAMETERS... HAZARDOUS TSUNAMI WAVES ARE FORECAST FOR SOME COASTS.

Pacific Tsunami Warning Center Enhanced Products for the CARIBE-EWS for CARIBE WAVE 2013

RECOMMENDED ACTIONS

* GOVERNMENT AGENCIES RESPONSIBLE FOR THREATENED COASTAL AREAS SHOULD TAKE ACTION TO INFORM AND INSTRUCT ANY COASTAL POPULATIONS AT RISK IN ACCORDANCE WITH THEIR OWN EVALUATION... PROCEDURES AND THE LEVEL OF THREAT.

* PERSONS LOCATED IN THREATENED COASTAL AREAS SHOULD STAY ALERT FOR INFORMATION AND FOLLOW INSTRUCTIONS FROM LOCAL AUTHORITIES.

ESTIMATED TIMES OF ARRIVAL

* ESTIMATED TIMES OF ARRIVAL -ETA- OF THE INITIAL TSUNAMI WAVE ARE GIVEN BELOW. ACTUAL ARRIVAL TIMES MAY DIFFER AND THE INITIAL WAVE MAY NOT BE THE LARGEST. A TSUNAMI IS A SERIES OF WAVES AND THE TIME BETWEEN WAVES CAN BE FIVE MINUTES TO ONE HOUR.

LOCATION	REGION	COORDINATES	ETA(UTC)
ONIMA	BONAIRE	12.3N 68.3W	1325 03/20
WILLEMSTAD	CURACAO	12.1N 68.9W	1348 03/20
JACAMEL	HAITI	18.1N 72.5W	1351 03/20
SANTO DOMINGO	DOMINICAN REP	18.5N 69.9W	1353 03/20
MAIQUETIA	VENEZUELA	10.6N 67.0W	1402 03/20
SANTA MARTA	COLOMBIA	11.2N 74.2W	1405 03/20
CABO ENGANO	DOMINICAN REP	18.6N 68.3W	1409 03/20
SABA	SABA	17.6N 63.2W	1421 03/20
CARTAGENA	COLOMBIA	10.4N 75.6W	1421 03/20
BASSETERRE	SAINT KITTS	17.3N 62.7W	1422 03/20
PLYMOUTH	MONTserrat	16.7N 62.2W	1423 03/20
JEREMIE	HAITI	18.6N 74.1W	1423 03/20
BASSE TERRE	GUADELOUPE	16.0N 61.7W	1425 03/20
SINT EUSTATIUS	SINT EUSTATIUS	17.5N 63.0W	1425 03/20
ROSEAU	DOMINICA	15.3N 61.4W	1426 03/20
CASTRIES	SAINT LUCIA	14.0N 61.0W	1428 03/20
KINGSTOWN	SAINT VINCENT	13.1N 61.2W	1429 03/20
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Pacific Tsunami Warning Center Enhanced Products for the CARIBE- EWS for CARIBE WAVE 2013

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GIBARA CUBA 21.1N 76.1W 1505 03/20
MONTEGO BAY JAMAICA 18.5N 77.9W 1507 03/20
BAIE BLANCHE SAINT MARTIN 18.1N 63.0W 1508 03/20
CAYMAN ISLANDS GRAND CAYMAN 19.3N 81.3W 1515 03/20
SAN SALVADOR BAHAMAS 24.1N 74.5W 1518 03/20
PIRATES BAY TRINIDAD TOBAGO 11.3N 60.6W 1521 03/20
PUERTO LIMON COSTA RICA 10.0N 83.0W 1521 03/20
CIENFUEGOS CUBA 22.0N 80.5W 1523 03/20
COLON PANAMA 9.4N 79.9W 1523 03/20
LONG ISLAND BAHAMAS 23.3N 75.1W 1525 03/20
PORT AU PRINCE HAITI 18.5N 72.4W 1526 03/20
EXUMA BAHAMAS 23.6N 75.9W 1534 03/20
BOCAS DEL TORO PANAMA 9.4N 82.2W 1535 03/20
CAT ISLAND BAHAMAS 24.4N 75.5W 1535 03/20
CROOKED ISLAND BAHAMAS 22.7N 74.1W 1536 03/20
ELEUTHERA ISLAN BAHAMAS 25.2N 76.1W 1541 03/20
PUNTO FIJO VENEZUELA 11.7N 70.2W 1542 03/20
ANDROS ISLAND BAHAMAS 25.0N 77.9W 1550 03/20
PORT OF SPAIN TRINIDAD TOBAGO 10.6N 61.5W 1553 03/20
RUTHS BAY BERMUDA 32.4N 64.6W 1600 03/20
NASSAU BAHAMAS 25.1N 77.4W 1602 03/20
COZUMEL MEXICO 20.5N 87.0W 1612 03/20

Pacific Tsunami Warning Center Enhanced Products for the CARIBE-EWS for CARIBE WAVE 2013

PUNTA GORDA	NICARAGUA	11.4N	83.8W	1614	03/20
FREEPORT	BAHAMAS	26.5N	78.8W	1614	03/20
ABACO ISLAND	BAHAMAS	26.6N	77.1W	1618	03/20
BIMINI	BAHAMAS	25.8N	79.3W	1627	03/20
GOLFO VENEZUELA	VENEZUELA	11.4N	71.2W	1641	03/20
SANTA CRZ D SUR	CUBA	20.7N	78.0W	1746	03/20
PORLAMAR	VENEZUELA	10.9N	63.8W	1759	03/20
NUEVA GERONA	CUBA	21.9N	82.8W	1923	03/20
PUERTO CABEZAS	NICARAGUA	14.0N	83.4W	1944	03/20

POTENTIAL IMPACTS

- * TSUNAMI WAVES OF MORE THAN 3 METERS ARE CAPABLE OF CAUSING ALMOST COMPLETE DESTRUCTION OF COASTAL STRUCTURES AND INFRASTRUCTURE IN LOW-LYING COASTAL AREAS.
- * TSUNAMI WAVES OF 1 TO 3 METERS ARE CAPABLE OF FLOODING AND DAMAGING STRUCTURES AND INFRASTRUCTURE IN LOW-LYING COASTAL AREAS.
- * TSUNAMI WAVES OF 0.3 TO 1 METER MAY CAUSE STRONG AND UNUSUAL OCEAN CURRENTS AND MINOR FLOODING OF BEACH AND HARBOR AREAS.
- * TSUNAMI WAVES OF LESS THAN 0.3 METER ARE GENERALLY NOT A HAZARD.
- * PERSONS CAUGHT IN THE WATER OF A TSUNAMI MAY DROWN... BE CRUSHED BY DEBRIS IN THE WATER... OR BE SWEEPED OUT TO SEA.
- * A TSUNAMI IS A SERIES OF WAVES. THE TIME BETWEEN WAVE CRESTS CAN VARY FROM 5 MINUTES TO AN HOUR. THE HAZARD MAY PERSIST FOR MANY HOURS OR LONGER AFTER THE INITIAL WAVE.
- * IMPACTS CAN VARY SIGNIFICANTLY FROM ONE SECTION OF COAST TO THE NEXT DUE TO LOCAL BATHYMETRY AND THE SHAPE AND ELEVATION OF THE SHORELINE.
- * IMPACTS CAN ALSO VARY DEPENDING UPON THE STATE OF THE TIDE AT THE TIME OF THE MAXIMUM TSUNAMI WAVES.

TSUNAMI OBSERVATIONS

Pacific Tsunami Warning Center Enhanced Products for the CARIBE-EWS for CARIBE WAVE 2013

* THE FOLLOWING ARE TSUNAMI WAVE OBSERVATIONS FROM COASTAL AND/OR DEEP-OCEAN SEA LEVEL GAUGES AT THE INDICATED LOCATIONS. THE MAXIMUM TSUNAMI HEIGHT IS MEASURED WITH RESPECT TO THE NORMAL TIDE LEVEL.

GAUGE LOCATION	GAUGE COORDINATES	TIME OF MEASURE	MAXIMUM TSUNAMI HEIGHT	WAVE PERIOD (MIN)
	LAT LON	(UTC)	(M/FT)	
DART 42407	15.3N 68.2W	1324	0.42M/ 1.4FT	20
MONA ISLAND PR	18.1N 67.9W	1355	3.77M/12.2FT	18
PENUELAS PR	18.0N 66.8W	1359	1.11M/ 3.6FT	16
WILLEMSTAD CURACAO	12.1N 68.9W	1359	3.44M/11.2FT	20
PUNTA CANA DR	18.5N 68.4W	1405	4.50M/14.6FT	20
BARAHONA DR	18.2N 71.1W	1407	6.15M/20.0FT	18
LIMETREE VI	17.7N 64.8W	1411	1.41M/ 4.6FT	16
YABUCOA PR	18.1N 65.8W	1411	0.86M/ 2.8FT	22
MAYAGUEZ PR	18.2N 67.2W	1412	0.65M/ 2.1FT	12

PRELIMINARY EARTHQUAKE PARAMETERS

* MAGNITUDE 8.5
* ORIGIN TIME 1300 UTC MAR 20 2013
* COORDINATES 13.4 NORTH 69.9 WEST
* DEPTH 20 KM / 12 MILES
* LOCATION CARIBBEAN SEA

NEXT UPDATE AND ADDITIONAL INFORMATION

- * THE NEXT MESSAGE WILL BE ISSUED IN ONE HOUR... OR SOONER IF THE SITUATION WARRANTS.
- * AUTHORITATIVE INFORMATION ABOUT THE EARTHQUAKE FROM THE U.S. GEOLOGICAL SURVEY CAN BE FOUND ON THE INTERNET AT EARTHQUAKE.USGS.GOV/EARTHQUAKES/MAP.
- * FURTHER INFORMATION ABOUT THIS EVENT MAY BE FOUND AT PTWC.WEATHER.GOV AND AT WWW.TSUNAMI.GOV.
- * COASTAL REGIONS OF PUERTO RICO AND THE VIRGIN ISLANDS SHOULD

Pacific Tsunami Warning Center Enhanced Products for the CARIBE-EWS for CARIBE WAVE 2013

REFER TO WEST COAST AND ALASKA TSUNAMI WARNING CENTER MESSAGES THAT CAN BE FOUND AT WCATWC.ARH.NOAA.GOV.

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ZCZC
WECA41 PHEB 201515
TSUCAX

TSUNAMI MESSAGE NUMBER 4
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
1515 UCT WED MAR 20 2013

...TSUNAMI THREAT MESSAGE...

THIS MESSAGE IS FOR ALL COASTAL AREAS OF THE CARIBBEAN AND ITS ADJACENT SEAS EXCEPT THOSE OF PUERTO RICO AND THE VIRGIN ISLANDS. IT IS ISSUED AS ADVICE IN SUPPORT OF THE UNESCO/IOC TSUNAMI AND OTHER COASTAL HAZARDS WARNING SYSTEM FOR THE CARIBBEAN AND ADJACENT REGIONS - CARIBE-EWS.

TSUNAMI THREAT FORECAST

* MORE THAN 3 METERS - TSUNAMI WAVES REACHING 3 METERS OR MORE ABOVE THE NORMAL TIDE ARE FORECAST FOR COASTS IN

COLOMBIA... DOMINICAN REPUBLIC... HAITI... ARUBA...
CURACAO... BONAIRE... AND VENEZUELA.

* 1 TO 3 METERS - TSUNAMI WAVES REACHING 1 TO 3 METERS ABOVE THE NORMAL TIDE ARE FORECAST FOR COASTS IN

COSTA RICA... PANAMA... ANGUILLA... ANTIGUA AND BARBUDA...
DOMINICA... GRENADA... GUADELOUPE... JAMAICA... MARTINIQUE...
MONTSERRAT... SAINT KITTS AND NEVIS... SAINT LUCIA... SINT
MAARTEN... SABA AND SINT EUSTATIUS... SAINT BARTHELEMY... SAINT
MARTIN... AND SAINT VINCENT AND THE GRENADINES.

* 0.3 TO 1 METERS - TSUNAMI WAVES REACHING 0.3 TO 1 METERS ABOVE THE NORMAL TIDE ARE FORECAST FOR COASTS IN

CUBA... MEXICO... NICARAGUA... BAHAMAS... BARBADOS...

Pacific Tsunami Warning Center Enhanced Products for the CARIBE-EWS for CARIBE WAVE 2013

BERMUDA... CAYMAN ISLANDS... TRINIDAD AND TOBAGO... AND TURKS AND CAICOS ISLANDS.

* LESS THAN 0.3 METERS - TSUNAMI WAVES LESS THAN 0.3 METERS ABOVE THE NORMAL TIDE ARE FORECAST FOR COASTS IN

BRAZIL... GUYANA... HONDURAS... GUATEMALA... SURINAME... BELIZE... AND FRENCH GUIANA.

EVALUATION

* AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 8.5 OCCURRED IN THE CARIBBEAN SEA AT 1300 UTC ON WEDNESDAY MARCH 20 2013.

* BASED ON THE PRELIMINARY SEISMIC PARAMETERS... HAZARDOUS TSUNAMI WAVES ARE FORECAST FOR SOME COASTS.

RECOMMENDED ACTIONS

* GOVERNMENT AGENCIES RESPONSIBLE FOR THREATENED COASTAL AREAS SHOULD TAKE ACTION TO INFORM AND INSTRUCT ANY COASTAL POPULATIONS AT RISK IN ACCORDANCE WITH THEIR OWN EVALUATION... PROCEDURES AND THE LEVEL OF THREAT.

* PERSONS LOCATED IN THREATENED COASTAL AREAS SHOULD STAY ALERT FOR INFORMATION AND FOLLOW INSTRUCTIONS FROM LOCAL AUTHORITIES.

ESTIMATED TIMES OF ARRIVAL

* ESTIMATED TIMES OF ARRIVAL -ETA- OF THE INITIAL TSUNAMI WAVE ARE GIVEN BELOW. ACTUAL ARRIVAL TIMES MAY DIFFER AND THE INITIAL WAVE MAY NOT BE THE LARGEST. A TSUNAMI IS A SERIES OF WAVES AND THE TIME BETWEEN WAVES CAN BE FIVE MINUTES TO ONE HOUR.

Pacific Tsunami Warning Center Enhanced Products for the CARIBE-EWS for CARIBE WAVE 2013

LOCATION	REGION	COORDINATES	ETA(UTC)
SABA	SABA	17.6N 63.2W	1421 03/20
CARTAGENA	COLOMBIA	10.4N 75.6W	1421 03/20
BASSETERRE	SAINT KITTS	17.3N 62.7W	1422 03/20
PLYMOUTH	MONTserrat	16.7N 62.2W	1423 03/20
JEREMIE	HAITI	18.6N 74.1W	1423 03/20
BASSE TERRE	GUADELOUPE	16.0N 61.7W	1425 03/20
SINT EUSTATIUS	SINT EUSTATIUS	17.5N 63.0W	1425 03/20
ROSEAU	DOMINICA	15.3N 61.4W	1426 03/20
CASTRIES	SAINT LUCIA	14.0N 61.0W	1428 03/20
KINGSTOWN	SAINT VINCENT	13.1N 61.2W	1429 03/20
BARRANQUILLA	COLOMBIA	11.1N 74.9W	1430 03/20
SIMPSON BAAI	SINT MAARTEN	18.0N 63.1W	1430 03/20
SANTIAGO D CUBA	CUBA	19.9N 75.8W	1430 03/20
FORT DE FRANCE	MARTINIQUE	14.6N 61.1W	1433 03/20
RIOHACHA	COLOMBIA	11.6N 72.9W	1433 03/20
CUMANA	VENEZUELA	10.5N 64.2W	1435 03/20
PUERTO PLATA	DOMINICAN REP	19.8N 70.7W	1435 03/20
THE VALLEY	ANGUILLA	18.3N 63.1W	1438 03/20
SAINT GEORGES	GRENADA	12.0N 61.8W	1438 03/20
ALIGANDI	PANAMA	9.2N 78.0W	1442 03/20
BARACOA	CUBA	20.4N 74.5W	1446 03/20
GRAND TURK	TURKS N CAICOS	21.5N 71.1W	1446 03/20
PUERTO CARRETO	PANAMA	8.8N 77.6W	1449 03/20
GREAT INAGUA	BAHAMAS	20.9N 73.7W	1452 03/20
CAP HAITEN	HAITI	19.8N 72.2W	1452 03/20
BRIDGETOWN	BARBADOS	13.1N 59.6W	1455 03/20
KINGSTON	JAMAICA	17.9N 76.9W	1455 03/20
SAINT BARTHELEM	SAINT BARTHELEMY	17.9N 62.8W	1457 03/20
CAYMAN ISLANDS	CAYMAN BRAC	19.7N 79.9W	1459 03/20
PUERTO OBALDIA	PANAMA	8.7N 77.4W	1501 03/20
WEST CAICOS	TURKS N CAICOS	21.7N 72.5W	1502 03/20
MAYAGUANA	BAHAMAS	22.3N 73.0W	1502 03/20
SAINT JOHNS	ANTIGUA	17.1N 61.9W	1502 03/20
PUNTA CARIBANA	COLOMBIA	8.6N 76.9W	1505 03/20
PALMETTO POINT	BARBUDA	17.6N 61.9W	1505 03/20
GIBARA	CUBA	21.1N 76.1W	1505 03/20
MONTEGO BAY	JAMAICA	18.5N 77.9W	1507 03/20
BAIE BLANCHE	SAINT MARTIN	18.1N 63.0W	1508 03/20
CAYMAN ISLANDS	GRAND CAYMAN	19.3N 81.3W	1515 03/20
SAN SALVADOR	BAHAMAS	24.1N 74.5W	1518 03/20
PIRATES BAY	TRINIDAD TOBAGO	11.3N 60.6W	1521 03/20
PUERTO LIMON	COSTA RICA	10.0N 83.0W	1521 03/20
CIENFUEGOS	CUBA	22.0N 80.5W	1523 03/20

Pacific Tsunami Warning Center Enhanced Products for the CARIBE-EWS for CARIBE WAVE 2013

COLON	PANAMA	9.4N 79.9W 1523 03/20
LONG ISLAND	BAHAMAS	23.3N 75.1W 1525 03/20
PORT AU PRINCE	HAITI	18.5N 72.4W 1526 03/20
EXUMA	BAHAMAS	23.6N 75.9W 1534 03/20
BOCAS DEL TORO	PANAMA	9.4N 82.2W 1535 03/20
CAT ISLAND	BAHAMAS	24.4N 75.5W 1535 03/20
CROOKED ISLAND	BAHAMAS	22.7N 74.1W 1536 03/20
ELEUTHERA ISLAN	BAHAMAS	25.2N 76.1W 1541 03/20
PUNTO FIJO	VENEZUELA	11.7N 70.2W 1542 03/20
ANDROS ISLAND	BAHAMAS	25.0N 77.9W 1550 03/20
PORT OF SPAIN	TRINIDAD TOBAGO	10.6N 61.5W 1553 03/20
RUTHS BAY	BERMUDA	32.4N 64.6W 1600 03/20
NASSAU	BAHAMAS	25.1N 77.4W 1602 03/20
COZUMEL	MEXICO	20.5N 87.0W 1612 03/20
PUNTA GORDA	NICARAGUA	11.4N 83.8W 1614 03/20
FREEPORT	BAHAMAS	26.5N 78.8W 1614 03/20
ABACO ISLAND	BAHAMAS	26.6N 77.1W 1618 03/20
BIMINI	BAHAMAS	25.8N 79.3W 1627 03/20
GOLFO VENEZUELA	VENEZUELA	11.4N 71.2W 1641 03/20
SANTA CRZ D SUR	CUBA	20.7N 78.0W 1746 03/20
PORLAMAR	VENEZUELA	10.9N 63.8W 1759 03/20
NUEVA GERONA	CUBA	21.9N 82.8W 1923 03/20
PUERTO CABEZAS	NICARAGUA	14.0N 83.4W 1944 03/20

POTENTIAL IMPACTS

- * TSUNAMI WAVES OF MORE THAN 3 METERS ARE CAPABLE OF CAUSING ALMOST COMPLETE DESTRUCTION OF COASTAL STRUCTURES AND INFRASTRUCTURE IN LOW-LYING COASTAL AREAS.
- * TSUNAMI WAVES OF 1 TO 3 METERS ARE CAPABLE OF FLOODING AND DAMAGING STRUCTURES AND INFRASTRUCTURE IN LOW-LYING COASTAL AREAS.
- * TSUNAMI WAVES OF 0.3 TO 1 METER MAY CAUSE STRONG AND UNUSUAL OCEAN CURRENTS AND MINOR FLOODING OF BEACH AND HARBOR AREAS.
- * TSUNAMI WAVES OF LESS THAN 0.3 METER ARE GENERALLY NOT A HAZARD.
- * PERSONS CAUGHT IN THE WATER OF A TSUNAMI MAY DROWN... BE CRUSHED BY DEBRIS IN THE WATER... OR BE SWEEPED OUT TO SEA.

Pacific Tsunami Warning Center Enhanced Products for the CARIBE-EWS for CARIBE WAVE 2013

* A TSUNAMI IS A SERIES OF WAVES. THE TIME BETWEEN WAVE CRESTS CAN VARY FROM 5 MINUTES TO AN HOUR. THE HAZARD MAY PERSIST FOR MANY HOURS OR LONGER AFTER THE INITIAL WAVE.

* IMPACTS CAN VARY SIGNIFICANTLY FROM ONE SECTION OF COAST TO THE NEXT DUE TO LOCAL BATHYMETRY AND THE SHAPE AND ELEVATION OF THE SHORELINE.

* IMPACTS CAN ALSO VARY DEPENDING UPON THE STATE OF THE TIDE AT THE TIME OF THE MAXIMUM TSUNAMI WAVES.

TSUNAMI OBSERVATIONS

* THE FOLLOWING ARE TSUNAMI WAVE OBSERVATIONS FROM COASTAL AND/OR DEEP-OCEAN SEA LEVEL GAUGES AT THE INDICATED LOCATIONS. THE MAXIMUM TSUNAMI HEIGHT IS MEASURED WITH RESPECT TO THE NORMAL TIDE LEVEL.

GAUGE LOCATION	GAUGE COORDINATES LAT	GAUGE COORDINATES LON	TIME OF MAXIMUM MEASURE (UTC)	WAVE TSUNAMI HEIGHT (M)	WAVE PERIOD (MIN)
DART 42407	15.3N	68.2W	1324	0.42M/ 1.4FT	20
MONA ISLAND PR	18.1N	67.9W	1355	3.77M/12.2FT	18
PENUELAS PR	18.0N	66.8W	1359	1.11M/ 3.6FT	16
WILLEMSTAD CURACAO	12.1N	68.9W	1359	3.44M/11.2FT	20
PUNTA CANA DR	18.5N	68.4W	1405	4.50M/14.6FT	20
BARAHONA DR	18.2N	71.1W	1407	6.15M/20.0FT	18
LIMETREE VI	17.7N	64.8W	1411	1.41M/ 4.6FT	16
YABUCOA PR	18.1N	65.8W	1411	0.86M/ 2.8FT	22
MAYAGUEZ PR	18.2N	67.2W	1412	0.65M/ 2.1FT	12
ST CROIX VI	17.7N	64.7W	1417	0.84M/ 2.7FT	18
MAGUEYES ISLAND PR	18.0N	67.0W	1419	2.56M/ 8.3FT	24
ESPERANZA VIEQUES PR	18.1N	65.5W	1420	0.06M/ 1.9FT	16
AGUADILLA PR	18.5N	67.2W	1420	1.92M/ 6.3FT	19
ARECIBO PR	18.5N	66.7W	1422	1.43M/ 4.6FT	22
PORT SAN ANDRES DO	18.4N	69.6W	1427	13.54M/44.0FT	14
ROSEAU DM	15.3N	61.4W	1435	1.10M/ 3.6FT	18
SAN JUAN PR	18.5N	66.1W	1435	0.34M/ 1.1FT	14
PRICKLEY BAY GD	12.0N	61.8W	1448	1.29M/ 4.2FT	20
BARBUDA AG	17.9N	61.8W	1450	0.21M/ 0.7FT	22
PUERTO PLATA DR	19.8N	70.7W	1450	0.49M/ 1.6FT	22
LAMESHURBAYSTJOHNVI	18.3N	64.7W	1450	0.58M/ 1.9FT	17

Pacific Tsunami Warning Center Enhanced Products for the CARIBE-EWS for CARIBE WAVE 2013

CHARLOTTE-AMALIE VI 18.3N 64.9W 1455 0.95M/ 3.1FT 24
DESIRADE GUADALOUPE 16.3N 61.1W 1457 0.18M/ 0.6FT 24
CULEBRA IS PR 18.3N 65.3W 1459 1.38M/ 4.5FT 20
CAP HAITIEN HT 19.8N 72.2W 1511 0.14M/ 0.5FT 23

PRELIMINARY EARTHQUAKE PARAMETERS

* MAGNITUDE 8.5
* ORIGIN TIME 1300 UTC MAR 20 2013
* COORDINATES 13.4 NORTH 69.9 WEST
* DEPTH 20 KM / 12 MILES
* LOCATION CARIBBEAN SEA

NEXT UPDATE AND ADDITIONAL INFORMATION

- * THE NEXT MESSAGE WILL BE ISSUED IN ONE HOUR... OR SOONER IF THE SITUATION WARRANTS.
- * AUTHORITATIVE INFORMATION ABOUT THE EARTHQUAKE FROM THE U.S. GEOLOGICAL SURVEY CAN BE FOUND ON THE INTERNET AT EARTHQUAKE.USGS.GOV/EARTHQUAKES/MAP.
- * FURTHER INFORMATION ABOUT THIS EVENT MAY BE FOUND AT PTWC.WEATHER.GOV AND AT WWW.TSUNAMI.GOV.
- * COASTAL REGIONS OF PUERTO RICO AND THE VIRGIN ISLANDS SHOULD REFER TO WEST COAST AND ALASKA TSUNAMI WARNING CENTER MESSAGES THAT CAN BE FOUND AT WCATWC.ARH.NOAA.GOV.

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WECA41 PHEB 201610
TSUCAX

TSUNAMI MESSAGE NUMBER 5
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
1610 UCT WED MAR 20 2013

...TSUNAMI THREAT MESSAGE...

THIS MESSAGE IS FOR ALL COASTAL AREAS OF THE CARIBBEAN AND ITS

Pacific Tsunami Warning Center Enhanced Products for the CARIBE-EWS for CARIBE WAVE 2013

ADJACENT SEAS EXCEPT THOSE OF PUERTO RICO AND THE VIRGIN ISLANDS. IT IS ISSUED AS ADVICE IN SUPPORT OF THE UNESCO/IOC TSUNAMI AND OTHER COASTAL HAZARDS WARNING SYSTEM FOR THE CARIBBEAN AND ADJACENT REGIONS - CARIBE-EWS.

TSUNAMI THREAT FORECAST

* MORE THAN 3 METERS - TSUNAMI WAVES REACHING 3 METERS OR MORE ABOVE THE NORMAL TIDE ARE FORECAST FOR COASTS IN

COLOMBIA... DOMINICAN REPUBLIC... HAITI... ARUBA...
CURACAO... BONAIRE... AND VENEZUELA.

* 1 TO 3 METERS - TSUNAMI WAVES REACHING 1 TO 3 METERS ABOVE THE NORMAL TIDE ARE FORECAST FOR COASTS IN

COSTA RICA... PANAMA... ANGUILLA... ANTIGUA AND BARBUDA...
DOMINICA... GRENADA... GUADELOUPE... JAMAICA... MARTINIQUE...
MONTserrat... SAINT KITTS AND NEVIS... SAINT LUCIA... SINT
MAARTEN... SABA AND SINT EUSTATIUS... SAINT BARTHELEMY... SAINT
MARTIN... AND SAINT VINCENT AND THE GRENADINES.

* 0.3 TO 1 METERS - TSUNAMI WAVES REACHING 0.3 TO 1 METERS ABOVE THE NORMAL TIDE ARE FORECAST FOR COASTS IN

CUBA... MEXICO... NICARAGUA... BAHAMAS... BARBADOS...
BERMUDA... CAYMAN ISLANDS... TRINIDAD AND TOBAGO... AND TURKS
AND CAICOS ISLANDS.

* LESS THAN 0.3 METERS - TSUNAMI WAVES LESS THAN 0.3 METERS ABOVE THE NORMAL TIDE ARE FORECAST FOR COASTS IN

BRAZIL... GUYANA... HONDURAS... GUATEMALA... SURINAME...
BELIZE... AND FRENCH GUIANA.

EVALUATION

* AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 8.5 OCCURRED IN

Pacific Tsunami Warning Center Enhanced Products for the CARIBE-EWS for CARIBE WAVE 2013

THE CARIBBEAN SEA AT 1300 UTC ON WEDNESDAY MARCH 20 2013.

* BASED ON THE PRELIMINARY SEISMIC PARAMETERS... HAZARDOUS TSUNAMI WAVES ARE FORECAST FOR SOME COASTS.

RECOMMENDED ACTIONS

* GOVERNMENT AGENCIES RESPONSIBLE FOR THREATENED COASTAL AREAS SHOULD TAKE ACTION TO INFORM AND INSTRUCT ANY COASTAL POPULATIONS AT RISK IN ACCORDANCE WITH THEIR OWN EVALUATION... PROCEDURES AND THE LEVEL OF THREAT.

* PERSONS LOCATED IN THREATENED COASTAL AREAS SHOULD STAY ALERT FOR INFORMATION AND FOLLOW INSTRUCTIONS FROM LOCAL AUTHORITIES.

ESTIMATED TIMES OF ARRIVAL

* ESTIMATED TIMES OF ARRIVAL -ETA- OF THE INITIAL TSUNAMI WAVE ARE GIVEN BELOW. ACTUAL ARRIVAL TIMES MAY DIFFER AND THE INITIAL WAVE MAY NOT BE THE LARGEST. A TSUNAMI IS A SERIES OF WAVES AND THE TIME BETWEEN WAVES CAN BE FIVE MINUTES TO ONE HOUR.

LOCATION	REGION	COORDINATES	ETA(UTC)
CAYMAN ISLANDS	GRAND CAYMAN	19.3N 81.3W	1515 03/20
SAN SALVADOR	BAHAMAS	24.1N 74.5W	1518 03/20
PIRATES BAY	TRINIDAD TOBAGO	11.3N 60.6W	1521 03/20
PUERTO LIMON	COSTA RICA	10.0N 83.0W	1521 03/20
CIENFUEGOS	CUBA	22.0N 80.5W	1523 03/20
COLON	PANAMA	9.4N 79.9W	1523 03/20
LONG ISLAND	BAHAMAS	23.3N 75.1W	1525 03/20
PORT AU PRINCE	HAITI	18.5N 72.4W	1526 03/20
EXUMA	BAHAMAS	23.6N 75.9W	1534 03/20
BOCAS DEL TORO	PANAMA	9.4N 82.2W	1535 03/20
CAT ISLAND	BAHAMAS	24.4N 75.5W	1535 03/20
CROOKED ISLAND	BAHAMAS	22.7N 74.1W	1536 03/20
ELEUTHERA ISLAN	BAHAMAS	25.2N 76.1W	1541 03/20
PUNTO FIJO	VENEZUELA	11.7N 70.2W	1542 03/20
ANDROS ISLAND	BAHAMAS	25.0N 77.9W	1550 03/20

Pacific Tsunami Warning Center Enhanced Products for the CARIBE-EWS for CARIBE WAVE 2013

PORT OF SPAIN	TRINIDAD TOBAGO	10.6N	61.5W	1553	03/20
RUTHS BAY	BERMUDA	32.4N	64.6W	1600	03/20
NASSAU	BAHAMAS	25.1N	77.4W	1602	03/20
COZUMEL	MEXICO	20.5N	87.0W	1612	03/20
PUNTA GORDA	NICARAGUA	11.4N	83.8W	1614	03/20
FREEPORT	BAHAMAS	26.5N	78.8W	1614	03/20
ABACO ISLAND	BAHAMAS	26.6N	77.1W	1618	03/20
BIMINI	BAHAMAS	25.8N	79.3W	1627	03/20
GOLFO VENEZUELA	VENEZUELA	11.4N	71.2W	1641	03/20
SANTA CRZ D SUR	CUBA	20.7N	78.0W	1746	03/20
PORLAMAR	VENEZUELA	10.9N	63.8W	1759	03/20
NUEVA GERONA	CUBA	21.9N	82.8W	1923	03/20
PUERTO CABEZAS	NICARAGUA	14.0N	83.4W	1944	03/20

POTENTIAL IMPACTS

- * TSUNAMI WAVES OF MORE THAN 3 METERS ARE CAPABLE OF CAUSING ALMOST COMPLETE DESTRUCTION OF COASTAL STRUCTURES AND INFRASTRUCTURE IN LOW-LYING COASTAL AREAS.
- * TSUNAMI WAVES OF 1 TO 3 METERS ARE CAPABLE OF FLOODING AND DAMAGING STRUCTURES AND INFRASTRUCTURE IN LOW-LYING COASTAL AREAS.
- * TSUNAMI WAVES OF 0.3 TO 1 METER MAY CAUSE STRONG AND UNUSUAL OCEAN CURRENTS AND MINOR FLOODING OF BEACH AND HARBOR AREAS.
- * TSUNAMI WAVES OF LESS THAN 0.3 METER ARE GENERALLY NOT A HAZARD.
- * PERSONS CAUGHT IN THE WATER OF A TSUNAMI MAY DROWN... BE CRUSHED BY DEBRIS IN THE WATER... OR BE SWEEPED OUT TO SEA.
- * A TSUNAMI IS A SERIES OF WAVES. THE TIME BETWEEN WAVE CRESTS CAN VARY FROM 5 MINUTES TO AN HOUR. THE HAZARD MAY PERSIST FOR MANY HOURS OR LONGER AFTER THE INITIAL WAVE.
- * IMPACTS CAN VARY SIGNIFICANTLY FROM ONE SECTION OF COAST TO THE NEXT DUE TO LOCAL BATHYMETRY AND THE SHAPE AND ELEVATION OF THE SHORELINE.
- * IMPACTS CAN ALSO VARY DEPENDING UPON THE STATE OF THE TIDE AT THE TIME OF THE MAXIMUM TSUNAMI WAVES.

Pacific Tsunami Warning Center Enhanced Products for the CARIBE-EWS for CARIBE WAVE 2013

TSUNAMI OBSERVATIONS

* THE FOLLOWING ARE TSUNAMI WAVE OBSERVATIONS FROM COASTAL AND/OR DEEP-OCEAN SEA LEVEL GAUGES AT THE INDICATED LOCATIONS. THE MAXIMUM TSUNAMI HEIGHT IS MEASURED WITH RESPECT TO THE NORMAL TIDE LEVEL.

GAUGE LOCATION	GAUGE COORDINATES LAT LON	TIME OF MAXIMUM MEASURE (UTC)	WAVE TSUNAMI PERIOD HEIGHT (MIN)
DART 42407	15.3N 68.2W	1324	0.42M/ 1.4FT 20
MONA ISLAND PR	18.1N 67.9W	1355	3.77M/12.2FT 18
PENUELAS PR	18.0N 66.8W	1359	1.11M/ 3.6FT 16
WILLEMSTAD CURACAO	12.1N 68.9W	1359	3.44M/11.2FT 20
PUNTA CANA DR	18.5N 68.4W	1405	4.50M/14.6FT 20
BARAHONA DR	18.2N 71.1W	1407	6.15M/20.0FT 18
LIMETREE VI	17.7N 64.8W	1411	1.41M/ 4.6FT 16
YABUCOA PR	18.1N 65.8W	1411	0.86M/ 2.8FT 22
MAYAGUEZ PR	18.2N 67.2W	1412	0.65M/ 2.1FT 12
ST CROIX VI	17.7N 64.7W	1417	0.84M/ 2.7FT 18
MAGUEYES ISLAND PR	18.0N 67.0W	1419	2.56M/ 8.3FT 24
ESPERANZA VIEQUES PR	18.1N 65.5W	1420	0.06M/ 1.9FT 16
AGUADILLA PR	18.5N 67.2W	1420	1.92M/ 6.3FT 19
ARECIBO PR	18.5N 66.7W	1422	1.43M/ 4.6FT 22
PORT SAN ANDRES DO	18.4N 69.6W	1427	13.54M/44.0FT 14
ROSEAU DM	15.3N 61.4W	1435	1.10M/ 3.6FT 18
SAN JUAN PR	18.5N 66.1W	1435	0.34M/ 1.1FT 14
PRICKLEY BAY GD	12.0N 61.8W	1448	1.29M/ 4.2FT 20
BARBUDA AG	17.9N 61.8W	1450	0.21M/ 0.7FT 22
PUERTO PLATA DR	19.8N 70.7W	1450	0.49M/ 1.6FT 22
LAMESHURBAYSTJOHNVI	18.3N 64.7W	1450	0.58M/ 1.9FT 17
CHARLOTTE-AMALIE VI	18.3N 64.9W	1455	0.95M/ 3.1FT 24
DESIRADE GUADALOUPE	16.3N 61.1W	1457	0.18M/ 0.6FT 24
CULEBRA IS PR	18.3N 65.3W	1459	1.38M/ 4.5FT 20
CAP HAITIEN HT	19.8N 72.2W	1511	0.14M/ 0.5FT 23
FAJARDO PR	18.3N 65.6W	1518	1.21M/ 3.9FT 22
LIMON CR	10.0N 83.0W	1530	0.74M/ 2.4FT 26

Pacific Tsunami Warning Center Enhanced Products for the CARIBE-EWS for CARIBE WAVE 2013

PRELIMINARY EARTHQUAKE PARAMETERS

- * MAGNITUDE 8.5
- * ORIGIN TIME 1300 UTC MAR 20 2013
- * COORDINATES 13.4 NORTH 69.9 WEST
- * DEPTH 20 KM / 12 MILES
- * LOCATION CARIBBEAN SEA

NEXT UPDATE AND ADDITIONAL INFORMATION

- * THE NEXT MESSAGE WILL BE ISSUED IN ONE HOUR... OR SOONER IF THE SITUATION WARRANTS.
- * AUTHORITATIVE INFORMATION ABOUT THE EARTHQUAKE FROM THE U.S. GEOLOGICAL SURVEY CAN BE FOUND ON THE INTERNET AT EARTHQUAKE.USGS.GOV/EARTHQUAKES/MAP.
- * FURTHER INFORMATION ABOUT THIS EVENT MAY BE FOUND AT PTWC.WEATHER.GOV AND AT WWW.TSUNAMI.GOV.
- * COASTAL REGIONS OF PUERTO RICO AND THE VIRGIN ISLANDS SHOULD REFER TO WEST COAST AND ALASKA TSUNAMI WARNING CENTER MESSAGES THAT CAN BE FOUND AT WCATWC.ARH.NOAA.GOV.

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WECA41 PHEB 201710
TSUCAX

TSUNAMI MESSAGE NUMBER 6
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
1710 UCT WED MAR 20 2013

...TSUNAMI THREAT MESSAGE...

THIS MESSAGE IS FOR ALL COASTAL AREAS OF THE CARIBBEAN AND ITS ADJACENT SEAS EXCEPT THOSE OF PUERTO RICO AND THE VIRGIN ISLANDS. IT IS ISSUED AS ADVICE IN SUPPORT OF THE UNESCO/IOC TSUNAMI AND OTHER COASTAL HAZARDS WARNING SYSTEM FOR THE CARIBBEAN AND ADJACENT REGIONS - CARIBE-EWS.

Pacific Tsunami Warning Center Enhanced Products for the CARIBE-EWS for CARIBE WAVE 2013

TSUNAMI THREAT FORECAST

* MORE THAN 3 METERS - TSUNAMI WAVES REACHING 3 METERS OR MORE ABOVE THE NORMAL TIDE ARE FORECAST FOR COASTS IN

COLOMBIA... DOMINICAN REPUBLIC... HAITI... ARUBA...
CURACAO... BONAIRE... AND VENEZUELA.

* 1 TO 3 METERS - TSUNAMI WAVES REACHING 1 TO 3 METERS ABOVE THE NORMAL TIDE ARE FORECAST FOR COASTS IN

COSTA RICA... PANAMA... ANGUILLA... ANTIGUA AND BARBUDA...
DOMINICA... GRENADA... GUADELOUPE... JAMAICA... MARTINIQUE...
MONTserrat... SAINT KITTS AND NEVIS... SAINT LUCIA... SINT
MAARTEN... SABA AND SINT EUSTATIUS... SAINT BARTHELEMY... SAINT
MARTIN... AND SAINT VINCENT AND THE GRENADINES.

* 0.3 TO 1 METERS - TSUNAMI WAVES REACHING 0.3 TO 1 METERS ABOVE THE NORMAL TIDE ARE FORECAST FOR COASTS IN

CUBA... MEXICO... NICARAGUA... BAHAMAS... BARBADOS...
BERMUDA... CAYMAN ISLANDS... TRINIDAD AND TOBAGO... AND TURKS
AND CAICOS ISLANDS.

* LESS THAN 0.3 METERS - TSUNAMI WAVES LESS THAN 0.3 METERS ABOVE THE NORMAL TIDE ARE FORECAST FOR COASTS IN

BRAZIL... GUYANA... HONDURAS... GUATEMALA... SURINAME...
BELIZE... AND FRENCH GUIANA.

EVALUATION

* AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 8.5 OCCURRED IN THE CARIBBEAN SEA AT 1300 UTC ON WEDNESDAY MARCH 20 2013.

* BASED ON THE PRELIMINARY SEISMIC PARAMETERS... HAZARDOUS TSUNAMI WAVES ARE FORECAST FOR SOME COASTS.

Pacific Tsunami Warning Center Enhanced Products for the CARIBE-EWS for CARIBE WAVE 2013

RECOMMENDED ACTIONS

* GOVERNMENT AGENCIES RESPONSIBLE FOR THREATENED COASTAL AREAS SHOULD TAKE ACTION TO INFORM AND INSTRUCT ANY COASTAL POPULATIONS AT RISK IN ACCORDANCE WITH THEIR OWN EVALUATION... PROCEDURES AND THE LEVEL OF THREAT.

* PERSONS LOCATED IN THREATENED COASTAL AREAS SHOULD STAY ALERT FOR INFORMATION AND FOLLOW INSTRUCTIONS FROM LOCAL AUTHORITIES.

ESTIMATED TIMES OF ARRIVAL

* ESTIMATED TIMES OF ARRIVAL -ETA- OF THE INITIAL TSUNAMI WAVE ARE GIVEN BELOW. ACTUAL ARRIVAL TIMES MAY DIFFER AND THE INITIAL WAVE MAY NOT BE THE LARGEST. A TSUNAMI IS A SERIES OF WAVES AND THE TIME BETWEEN WAVES CAN BE FIVE MINUTES TO ONE HOUR.

LOCATION	REGION	COORDINATES	ETA(UTC)
COZUMEL	MEXICO	20.5N 87.0W	1612 03/20
PUNTA GORDA	NICARAGUA	11.4N 83.8W	1614 03/20
FREEMPORT	BAHAMAS	26.5N 78.8W	1614 03/20
ABACO ISLAND	BAHAMAS	26.6N 77.1W	1618 03/20
BIMINI	BAHAMAS	25.8N 79.3W	1627 03/20
GOLFO VENEZUELA	VENEZUELA	11.4N 71.2W	1641 03/20
SANTA CRZ D SUR	CUBA	20.7N 78.0W	1746 03/20
PORLAMAR	VENEZUELA	10.9N 63.8W	1759 03/20
NUEVA GERONA	CUBA	21.9N 82.8W	1923 03/20
PUERTO CABEZAS	NICARAGUA	14.0N 83.4W	1944 03/20

POTENTIAL IMPACTS

* TSUNAMI WAVES OF MORE THAN 3 METERS ARE CAPABLE OF CAUSING ALMOST COMPLETE DESTRUCTION OF COASTAL STRUCTURES AND INFRASTRUCTURE IN LOW-LYING COASTAL AREAS.

* TSUNAMI WAVES OF 1 TO 3 METERS ARE CAPABLE OF FLOODING AND DAMAGING STRUCTURES AND INFRASTRUCTURE IN LOW-LYING COASTAL

Pacific Tsunami Warning Center Enhanced Products for the CARIBE-EWS for CARIBE WAVE 2013

AREAS.

* TSUNAMI WAVES OF 0.3 TO 1 METER MAY CAUSE STRONG AND UNUSUAL OCEAN CURRENTS AND MINOR FLOODING OF BEACH AND HARBOR AREAS.

* TSUNAMI WAVES OF LESS THAN 0.3 METER ARE GENERALLY NOT A HAZARD.

* PERSONS CAUGHT IN THE WATER OF A TSUNAMI MAY DROWN... BE CRUSHED BY DEBRIS IN THE WATER... OR BE SWEEPED OUT TO SEA.

* A TSUNAMI IS A SERIES OF WAVES. THE TIME BETWEEN WAVE CRESTS CAN VARY FROM 5 MINUTES TO AN HOUR. THE HAZARD MAY PERSIST FOR MANY HOURS OR LONGER AFTER THE INITIAL WAVE.

* IMPACTS CAN VARY SIGNIFICANTLY FROM ONE SECTION OF COAST TO THE NEXT DUE TO LOCAL BATHYMETRY AND THE SHAPE AND ELEVATION OF THE SHORELINE.

* IMPACTS CAN ALSO VARY DEPENDING UPON THE STATE OF THE TIDE AT THE TIME OF THE MAXIMUM TSUNAMI WAVES.

TSUNAMI OBSERVATIONS

* THE FOLLOWING ARE TSUNAMI WAVE OBSERVATIONS FROM COASTAL AND/OR DEEP-OCEAN SEA LEVEL GAUGES AT THE INDICATED LOCATIONS. THE MAXIMUM TSUNAMI HEIGHT IS MEASURED WITH RESPECT TO THE NORMAL TIDE LEVEL.

GAUGE LOCATION	GAUGE COORDINATES LAT LON	TIME OF MAXIMUM MEASURE (UTC)	WAVE TSUNAMI PERIOD HEIGHT (MIN)
DART 42407	15.3N 68.2W	1324	0.42M/ 1.4FT 20
MONA ISLAND PR	18.1N 67.9W	1355	3.77M/12.2FT 18
PENUELAS PR	18.0N 66.8W	1359	1.11M/ 3.6FT 16
WILLEMSTAD CURACAO	12.1N 68.9W	1359	3.44M/11.2FT 20
PUNTA CANA DR	18.5N 68.4W	1405	4.50M/14.6FT 20
BARAHONA DR	18.2N 71.1W	1407	6.15M/20.0FT 18
LIMETREE VI	17.7N 64.8W	1411	1.41M/ 4.6FT 16
YABUCOA PR	18.1N 65.8W	1411	0.86M/ 2.8FT 22
MAYAGUEZ PR	18.2N 67.2W	1412	0.65M/ 2.1FT 12
ST CROIX VI	17.7N 64.7W	1417	0.84M/ 2.7FT 18

Pacific Tsunami Warning Center Enhanced Products for the CARIBE-EWS for CARIBE WAVE 2013

MAGUEYES ISLAND PR 18.0N 67.0W 1419 2.56M/ 8.3FT 24
ESPERANZA VIEQUES PR 18.1N 65.5W 1420 0.06M/ 1.9FT 16
AGUADILLA PR 18.5N 67.2W 1420 1.92M/ 6.3FT 19
ARECIBO PR 18.5N 66.7W 1422 1.43M/ 4.6FT 22
PORT SAN ANDRES DO 18.4N 69.6W 1427 13.54M/44.0FT 14
ROSEAU DM 15.3N 61.4W 1435 1.10M/ 3.6FT 18
SAN JUAN PR 18.5N 66.1W 1435 0.34M/ 1.1FT 14
PRICKLEY BAY GD 12.0N 61.8W 1448 1.29M/ 4.2FT 20
BARBUDA AG 17.9N 61.8W 1450 0.21M/ 0.7FT 22
PUERTO PLATA DR 19.8N 70.7W 1450 0.49M/ 1.6FT 22
LAMESHURBAYSTJOHNVI 18.3N 64.7W 1450 0.58M/ 1.9FT 17
CHARLOTTE-AMALIE VI 18.3N 64.9W 1455 0.95M/ 3.1FT 24
DESIRADE GUADALOUPE 16.3N 61.1W 1457 0.18M/ 0.6FT 24
CULEBRA IS PR 18.3N 65.3W 1459 1.38M/ 4.5FT 20
CAP HAITIEN HT 19.8N 72.2W 1511 0.14M/ 0.5FT 23
FAJARDO PR 18.3N 65.6W 1518 1.21M/ 3.9FT 22
LIMON CR 10.0N 83.0W 1530 0.74M/ 2.4FT 26

PRELIMINARY EARTHQUAKE PARAMETERS

- * MAGNITUDE 8.5
- * ORIGIN TIME 1300 UTC MAR 20 2013
- * COORDINATES 13.4 NORTH 69.9 WEST
- * DEPTH 20 KM / 12 MILES
- * LOCATION CARIBBEAN SEA

NEXT UPDATE AND ADDITIONAL INFORMATION

- * THE NEXT MESSAGE WILL BE ISSUED IN ONE HOUR... OR SOONER IF THE SITUATION WARRANTS.
- * AUTHORITATIVE INFORMATION ABOUT THE EARTHQUAKE FROM THE U.S. GEOLOGICAL SURVEY CAN BE FOUND ON THE INTERNET AT EARTHQUAKE.USGS.GOV/EARTHQUAKES/MAP.
- * FURTHER INFORMATION ABOUT THIS EVENT MAY BE FOUND AT PTWC.WEATHER.GOV AND AT WWW.TSUNAMI.GOV.
- * COASTAL REGIONS OF PUERTO RICO AND THE VIRGIN ISLANDS SHOULD REFER TO WEST COAST AND ALASKA TSUNAMI WARNING CENTER MESSAGES THAT CAN BE FOUND AT WCATWC.ARH.NOAA.GOV.

Pacific Tsunami Warning Center Enhanced Products for the CARIBE-EWS for CARIBE WAVE 2013

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WECA41 PHEB 201810
TSUCAX

TSUNAMI MESSAGE NUMBER 7
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
1810 UCT WED MAR 20 2013

...TSUNAMI THREAT MESSAGE...

THIS MESSAGE IS FOR ALL COASTAL AREAS OF THE CARIBBEAN AND ITS ADJACENT SEAS EXCEPT THOSE OF PUERTO RICO AND THE VIRGIN ISLANDS. IT IS ISSUED AS ADVICE IN SUPPORT OF THE UNESCO/IOC TSUNAMI AND OTHER COASTAL HAZARDS WARNING SYSTEM FOR THE CARIBBEAN AND ADJACENT REGIONS - CARIBE-EWS.

TSUNAMI THREAT FORECAST

* MORE THAN 3 METERS - TSUNAMI WAVES REACHING 3 METERS OR MORE ABOVE THE NORMAL TIDE ARE FORECAST FOR COASTS IN

COLOMBIA... DOMINICAN REPUBLIC... HAITI... ARUBA...
CURACAO... BONAIRE... AND VENEZUELA.

* 1 TO 3 METERS - TSUNAMI WAVES REACHING 1 TO 3 METERS ABOVE THE NORMAL TIDE ARE FORECAST FOR COASTS IN

COSTA RICA... PANAMA... ANGUILLA... ANTIGUA AND BARBUDA...
DOMINICA... GRENADA... GUADELOUPE... JAMAICA... MARTINIQUE...
MONTSERRAT... SAINT KITTS AND NEVIS... SAINT LUCIA... SINT
MAARTEN... SABA AND SINT EUSTATIUS... SAINT BARTHELEMY... SAINT
MARTIN... AND SAINT VINCENT AND THE GRENADINES.

* 0.3 TO 1 METERS - TSUNAMI WAVES REACHING 0.3 TO 1 METERS ABOVE THE NORMAL TIDE ARE FORECAST FOR COASTS IN

CUBA... MEXICO... NICARAGUA... BAHAMAS... BARBADOS...
BERMUDA... CAYMAN ISLANDS... TRINIDAD AND TOBAGO... AND TURKS
AND CAICOS ISLANDS.

Pacific Tsunami Warning Center Enhanced Products for the CARIBE-EWS for CARIBE WAVE 2013

* LESS THAN 0.3 METERS - TSUNAMI WAVES LESS THAN 0.3 METERS ABOVE THE NORMAL TIDE ARE FORECAST FOR COASTS IN

BRAZIL... GUYANA... HONDURAS... GUATEMALA... SURINAME... BELIZE... AND FRENCH GUIANA.

EVALUATION

* AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 8.5 OCCURRED IN THE CARIBBEAN SEA AT 1300 UTC ON WEDNESDAY MARCH 20 2013.

* BASED ON THE PRELIMINARY SEISMIC PARAMETERS... HAZARDOUS TSUNAMI WAVES ARE FORECAST FOR SOME COASTS.

RECOMMENDED ACTIONS

* GOVERNMENT AGENCIES RESPONSIBLE FOR THREATENED COASTAL AREAS SHOULD TAKE ACTION TO INFORM AND INSTRUCT ANY COASTAL POPULATIONS AT RISK IN ACCORDANCE WITH THEIR OWN EVALUATION... PROCEDURES AND THE LEVEL OF THREAT.

* PERSONS LOCATED IN THREATENED COASTAL AREAS SHOULD STAY ALERT FOR INFORMATION AND FOLLOW INSTRUCTIONS FROM LOCAL AUTHORITIES.

ESTIMATED TIMES OF ARRIVAL

* ESTIMATED TIMES OF ARRIVAL -ETA- OF THE INITIAL TSUNAMI WAVE ARE GIVEN BELOW. ACTUAL ARRIVAL TIMES MAY DIFFER AND THE INITIAL WAVE MAY NOT BE THE LARGEST. A TSUNAMI IS A SERIES OF WAVES AND THE TIME BETWEEN WAVES CAN BE FIVE MINUTES TO ONE HOUR.

LOCATION	REGION	COORDINATES	ETA(UTC)
SANTA CRZ D SUR	CUBA	20.7N 78.0W	1746 03/20
PORLAMAR	VENEZUELA	10.9N 63.8W	1759 03/20

Pacific Tsunami Warning Center Enhanced Products for the CARIBE-EWS for CARIBE WAVE 2013

NUEVA GERONA CUBA 21.9N 82.8W 1923 03/20
PUERTO CABEZAS NICARAGUA 14.0N 83.4W 1944 03/20

POTENTIAL IMPACTS

- * TSUNAMI WAVES OF MORE THAN 3 METERS ARE CAPABLE OF CAUSING ALMOST COMPLETE DESTRUCTION OF COASTAL STRUCTURES AND INFRASTRUCTURE IN LOW-LYING COASTAL AREAS.
- * TSUNAMI WAVES OF 1 TO 3 METERS ARE CAPABLE OF FLOODING AND DAMAGING STRUCTURES AND INFRASTRUCTURE IN LOW-LYING COASTAL AREAS.
- * TSUNAMI WAVES OF 0.3 TO 1 METER MAY CAUSE STRONG AND UNUSUAL OCEAN CURRENTS AND MINOR FLOODING OF BEACH AND HARBOR AREAS.
- * TSUNAMI WAVES OF LESS THAN 0.3 METER ARE GENERALLY NOT A HAZARD.
- * PERSONS CAUGHT IN THE WATER OF A TSUNAMI MAY DROWN... BE CRUSHED BY DEBRIS IN THE WATER... OR BE SWEEPED OUT TO SEA.
- * A TSUNAMI IS A SERIES OF WAVES. THE TIME BETWEEN WAVE CRESTS CAN VARY FROM 5 MINUTES TO AN HOUR. THE HAZARD MAY PERSIST FOR MANY HOURS OR LONGER AFTER THE INITIAL WAVE.
- * IMPACTS CAN VARY SIGNIFICANTLY FROM ONE SECTION OF COAST TO THE NEXT DUE TO LOCAL BATHYMETRY AND THE SHAPE AND ELEVATION OF THE SHORELINE.
- * IMPACTS CAN ALSO VARY DEPENDING UPON THE STATE OF THE TIDE AT THE TIME OF THE MAXIMUM TSUNAMI WAVES.

TSUNAMI OBSERVATIONS

- * THE FOLLOWING ARE TSUNAMI WAVE OBSERVATIONS FROM COASTAL AND/OR DEEP-OCEAN SEA LEVEL GAUGES AT THE INDICATED LOCATIONS. THE MAXIMUM TSUNAMI HEIGHT IS MEASURED WITH RESPECT TO THE NORMAL TIDE LEVEL.

GAUGE	TIME OF	MAXIMUM	WAVE
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Pacific Tsunami Warning Center Enhanced Products for the CARIBE-EWS for CARIBE WAVE 2013

GAUGE LOCATION	COORDINATES LAT	MEASURE LON	TSUNAMI (UTC)	PERIOD HEIGHT (MIN)
DART 42407	15.3N	68.2W	1324	0.42M/ 1.4FT 20
MONA ISLAND PR	18.1N	67.9W	1355	3.77M/12.2FT 18
PENUELAS PR	18.0N	66.8W	1359	1.11M/ 3.6FT 16
WILLEMSTAD CURACAO	12.1N	68.9W	1359	3.44M/11.2FT 20
PUNTA CANA DR	18.5N	68.4W	1405	4.50M/14.6FT 20
BARAHONA DR	18.2N	71.1W	1407	6.15M/20.0FT 18
LIMETREE VI	17.7N	64.8W	1411	1.41M/ 4.6FT 16
YABUCOA PR	18.1N	65.8W	1411	0.86M/ 2.8FT 22
MAYAGUEZ PR	18.2N	67.2W	1412	0.65M/ 2.1FT 12
ST CROIX VI	17.7N	64.7W	1417	0.84M/ 2.7FT 18
MAGUEYES ISLAND PR	18.0N	67.0W	1419	2.56M/ 8.3FT 24
ESPERANZA VIEQUES PR	18.1N	65.5W	1420	0.06M/ 1.9FT 16
AGUADILLA PR	18.5N	67.2W	1420	1.92M/ 6.3FT 19
ARECIBO PR	18.5N	66.7W	1422	1.43M/ 4.6FT 22
PORT SAN ANDRES DO	18.4N	69.6W	1427	13.54M/44.0FT 14
ROSEAU DM	15.3N	61.4W	1435	1.10M/ 3.6FT 18
SAN JUAN PR	18.5N	66.1W	1435	0.34M/ 1.1FT 14
PRICKLEY BAY GD	12.0N	61.8W	1448	1.29M/ 4.2FT 20
BARBUDA AG	17.9N	61.8W	1450	0.21M/ 0.7FT 22
PUERTO PLATA DR	19.8N	70.7W	1450	0.49M/ 1.6FT 22
LAMESHURBAYSTJOHNV I	18.3N	64.7W	1450	0.58M/ 1.9FT 17
CHARLOTTE-AMALIE VI	18.3N	64.9W	1455	0.95M/ 3.1FT 24
DESIRADE GUADALOUPE	16.3N	61.1W	1457	0.18M/ 0.6FT 24
CULEBRA IS PR	18.3N	65.3W	1459	1.38M/ 4.5FT 20
CAP HAITIEN HT	19.8N	72.2W	1511	0.14M/ 0.5FT 23
FAJARDO PR	18.3N	65.6W	1518	1.21M/ 3.9FT 22
LIMON CR	10.0N	83.0W	1530	0.74M/ 2.4FT 26

PRELIMINARY EARTHQUAKE PARAMETERS

* MAGNITUDE 8.5
* ORIGIN TIME 1300 UTC MAR 20 2013
* COORDINATES 13.4 NORTH 69.9 WEST
* DEPTH 20 KM / 12 MILES
* LOCATION CARIBBEAN SEA

NEXT UPDATE AND ADDITIONAL INFORMATION

Pacific Tsunami Warning Center Enhanced Products for the CARIBE-EWS for CARIBE WAVE 2013

* THE NEXT MESSAGE WILL BE ISSUED IN ONE HOUR... OR SOONER IF THE SITUATION WARRANTS.

* AUTHORITATIVE INFORMATION ABOUT THE EARTHQUAKE FROM THE U.S. GEOLOGICAL SURVEY CAN BE FOUND ON THE INTERNET AT EARTHQUAKE.USGS.GOV/EARTHQUAKES/MAP.

* FURTHER INFORMATION ABOUT THIS EVENT MAY BE FOUND AT PTWC.WEATHER.GOV AND AT WWW.TSUNAMI.GOV.

* COASTAL REGIONS OF PUERTO RICO AND THE VIRGIN ISLANDS SHOULD REFER TO WEST COAST AND ALASKA TSUNAMI WARNING CENTER MESSAGES THAT CAN BE FOUND AT WCATWC.ARH.NOAA.GOV.

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WECA41 PHEB 201910

TSUCAX

TSUNAMI MESSAGE NUMBER 8

NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI

1910 UCT WED MAR 20 2013

...FINAL TSUNAMI THREAT MESSAGE...

THIS MESSAGE IS FOR ALL COASTAL AREAS OF THE CARIBBEAN AND ITS ADJACENT SEAS EXCEPT THOSE OF PUERTO RICO AND THE VIRGIN ISLANDS. IT IS ISSUED AS ADVICE IN SUPPORT OF THE UNESCO/IOC TSUNAMI AND OTHER COASTAL HAZARDS WARNING SYSTEM FOR THE CARIBBEAN AND ADJACENT REGIONS - CARIBE-EWS.

TSUNAMI THREAT FORECAST...UPDATED

* THE TSUNAMI THREAT HAS NOW LARGELY PASSED.

EVALUATION

* AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 8.5 OCCURRED IN THE CARIBBEAN SEA AT 1300 UTC ON WEDNESDAY MARCH 20 2013.

* BASED ON ALL AVAILABLE DATA... THE TSUNAMI THREAT FROM THIS

Pacific Tsunami Warning Center Enhanced Products for the CARIBE-EWS for CARIBE WAVE 2013

EARTHQUAKE HAS LARGELY PASSED ALTHOUGH SEA LEVEL FLUCTUATIONS CAN CONTINUE IN IMPACTED AREAS FOR MANY HOURS.

RECOMMENDED ACTIONS

- * GOVERNMENT AGENCIES RESPONSIBLE FOR ANY IMPACTED COASTAL AREAS SHOULD MONITOR CONDITIONS AT THE COAST TO DETERMINE IF AND WHEN IT IS SAFE TO RESUME NORMAL ACTIVITIES.
- * PERSONS LOCATED NEAR IMPACTED COASTAL AREAS SHOULD STAY ALERT FOR INFORMATION AND FOLLOW INSTRUCTIONS FROM LOCAL AUTHORITIES.
- * REMAIN OBSERVANT AND EXERCISE NORMAL CAUTION NEAR THE SEA.

POTENTIAL IMPACTS

- * MINOR SEA LEVEL FLUCTUATIONS OF UP TO 0.3 METERS ABOVE AND BELOW THE NORMAL TIDE MAY CONTINUE OVER THE NEXT FEW HOURS.

TSUNAMI OBSERVATIONS

- * THE FOLLOWING ARE TSUNAMI WAVE OBSERVATIONS FROM COASTAL AND/OR DEEP-OCEAN SEA LEVEL GAUGES AT THE INDICATED LOCATIONS. THE MAXIMUM TSUNAMI HEIGHT IS MEASURED WITH RESPECT TO THE NORMAL TIDE LEVEL.

GAUGE LOCATION	GAUGE	COORDINATES	TIME OF MEASURE	WAVE TSUNAMI PERIOD
		LAT LON	(UTC)	HEIGHT (MIN)
DART 42407	15.3N	68.2W	1324	0.42M/ 1.4FT 20
MONA ISLAND PR	18.1N	67.9W	1355	3.77M/12.2FT 18
PENUELAS PR	18.0N	66.8W	1359	1.11M/ 3.6FT 16
WILLEMSTAD CURACAO	12.1N	68.9W	1359	3.44M/11.2FT 20
PUNTA CANA DR	18.5N	68.4W	1405	4.50M/14.6FT 20
BARAHONA DR	18.2N	71.1W	1407	6.15M/20.0FT 18
LIMETREE VI	17.7N	64.8W	1411	1.41M/ 4.6FT 16
YABUCOA PR	18.1N	65.8W	1411	0.86M/ 2.8FT 22

Pacific Tsunami Warning Center Enhanced Products for the CARIBE-EWS for CARIBE WAVE 2013

MAYAGUEZ PR 18.2N 67.2W 1412 0.65M/ 2.1FT 12
ST CROIX VI 17.7N 64.7W 1417 0.84M/ 2.7FT 18
MAGUEYES ISLAND PR 18.0N 67.0W 1419 2.56M/ 8.3FT 24
ESPERANZA VIEQUES PR 18.1N 65.5W 1420 0.06M/ 1.9FT 16
AGUADILLA PR 18.5N 67.2W 1420 1.92M/ 6.3FT 19
ARECIBO PR 18.5N 66.7W 1422 1.43M/ 4.6FT 22
PORT SAN ANDRES DO 18.4N 69.6W 1427 13.54M/44.0FT 14
ROSEAU DM 15.3N 61.4W 1435 1.10M/ 3.6FT 18
SAN JUAN PR 18.5N 66.1W 1435 0.34M/ 1.1FT 14
PRICKLEY BAY GD 12.0N 61.8W 1448 1.29M/ 4.2FT 20
BARBUDA AG 17.9N 61.8W 1450 0.21M/ 0.7FT 22
PUERTO PLATA DR 19.8N 70.7W 1450 0.49M/ 1.6FT 22
LAMESHURBAYSTJOHNVI 18.3N 64.7W 1450 0.58M/ 1.9FT 17
CHARLOTTE-AMALIE VI 18.3N 64.9W 1455 0.95M/ 3.1FT 24
DESIRADE GUADALOUPE 16.3N 61.1W 1457 0.18M/ 0.6FT 24
CULEBRA IS PR 18.3N 65.3W 1459 1.38M/ 4.5FT 20
CAP HAITIEN HT 19.8N 72.2W 1511 0.14M/ 0.5FT 23
FAJARDO PR 18.3N 65.6W 1518 1.21M/ 3.9FT 22
LIMON CR 10.0N 83.0W 1530 0.74M/ 2.4FT 26

PRELIMINARY EARTHQUAKE PARAMETERS

* MAGNITUDE 8.5
* ORIGIN TIME 1300 UTC MAR 20 2013
* COORDINATES 13.4 NORTH 69.9 WEST
* DEPTH 20 KM / 12 MILES
* LOCATION CARIBBEAN SEA

NEXT UPDATE AND ADDITIONAL INFORMATION

- * THIS WILL BE THE FINAL STATEMENT ISSUED FOR THIS EVENT UNLESS NEW INFORMATION IS RECEIVED OR THE SITUATION CHANGES.
- * AUTHORITATIVE INFORMATION ABOUT THE EARTHQUAKE FROM THE U.S. GEOLOGICAL SURVEY CAN BE FOUND ON THE INTERNET AT EARTHQUAKE.USGS.GOV/EARTHQUAKES/MAP.
- * FURTHER INFORMATION ABOUT THIS EVENT MAY BE FOUND AT PTWC.WEATHER.GOV AND AT WWW.TSUNAMI.GOV.
- * COASTAL REGIONS OF PUERTO RICO AND THE VIRGIN ISLANDS SHOULD

Pacific Tsunami Warning Center Enhanced Products for the CARIBE-EWS for CARIBE WAVE 2013

REFER TO WEST COAST AND ALASKA TSUNAMI WARNING CENTER MESSAGES
THAT CAN BE FOUND AT WCATWC.ARH.NOAA.GOV.

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EXERCISE