

Holocene Volcanic Activity in all Caribbean Plate Margins: Forecast and Risk Assessment



by **R.B. Trombley, Ph.D.**
Director & Principal Research Volcanologist
International Volcano Research Centre (INTLVRC)
Apache Junction, Arizona USA 85219
e-mail: swvrc@usa.net (480) 671-1601

CARIBBEAN VOLCANIC ACTIVITY & FORECAST REPORT

3 March 2009

The Caribbean area primarily consists of the countries of Mexico, Guatemala, Honduras, Nicaragua, Costa Rica, Panama, Columbia and Venezuela and the island nations represented in the Lesser Antilles. Some countries such as Cuba, Dominican Republic, Puerto Rico, Jamaica and Venezuela, do not have any active volcanoes within.

The following table presents the current eruption status and forecast for all volcanoes within the Caribbean Plate boundaries. It will be upgraded from time to time as appropriate and as necessary.



All forecasts on the following table have been compiled, using presently loaded data, from the INTLVRC software programme, **ERUPTION Pro 10.7**, the only known long-range and reasonably accurate forecasting programme of it kind in the world. Accuracy, relative to Caribbean area volcanoes only, is as follows: To date, there have been **7** eruptions in the Caribbean. Of **11** volcanoes originally forecasted, **7** have confirmed eruptions so far. With no misses, the overall accuracy for year **2009** is **63.6%** to date.

KEY:

Volcano =	Name of volcano
Country =	Country of volcano location
Next Forecasted Year =	Year volcano is next forecasted to erupt
Yr. Of =>50% =	Year volcano is forecasted to erupt with =>50% probability
Yr. Of =>95% =	Year volcano is forecasted to erupt with =>95% probability
Current Status =	Current status of the volcano at this time

ACTIVE VOLCANO STATUS OF THE CARIBBEAN

AS OF: 3 March 2009

<u>Volcano</u>	<u>Country</u>	Next Forecast <u>Year</u>	Yr. Of <u>=>50%</u>	Yr. Of <u>=>95%</u>	<u>Current Status</u>
Ceboruco	Mexico	1874	2053	2663	In Repose
Colima	Mexico	2009	2101	2411	Erupted
El Chichon	Mexico	1998	2193	2861	In Repose
Jocotitlan	Mexico	1272	4648	15872	In Repose
Michoacan- Guanajuato	Mexico	1951	2753	5445	In Repose
Pico De Orizaba	Mexico	1712	1728	1867	In Repose
Pinacate	Mexico	1948	1962	2055	In Repose
Popocatepetl	Mexico	2009	2137	2566	Erupted
San Martin	Mexico	1944	2196	3076	In Repose
Socorro	Mexico	1998	2015	2089	In Repose
Tacana	Mexico	1990	2012	2101	In Repose
Tres Virgenes	Mexico	1861	1948	2250	In Repose
Acatenango	Guatemala	1977	2250	3175	In Repose
Almolonga	Guatemala	1821	2097	3025	In Repose
Atitlan	Guatemala	1873	1882	1971	Overdue
Fuego	Guatemala	2058	2009	2025	Erupted
Pacaya	Guatemala	2009	2031	2010	Erupted
Santa Maria	Guatemala	2016	2009	2034	Erupted
Tajumulco	Guatemala	1871	1928	2144	In Repose
Cerro Negro	Nicaragua	2015	2003	2018	In Repose
Concepcion	Nicaragua	2025	2012	2030	In Repose
Cosiguina	Nicaragua	1868	1909	2076	In Repose
Las Pilas	Nicaragua	1957	2064	2432	In Repose
Masaya	Nicaragua	2036	2009	2685	Forecasted
Momotombo	Nicaragua	2013	2152	2676	In Repose
San Cristobal	Nicaragua	2025	2009	2080	Forecasted

ACTIVE VOLCANO STATUS OF THE CARIBBEAN

AS OF: 3 March 2009

<u>Volcano</u>	<u>Country</u>	<u>Next Forecast Year</u>	<u>Yr. Of =>50%</u>	<u>Yr. Of =>95%</u>	<u>Current Status</u>
Telica	Nicaragua	2036	2016	2047	In Repose
Arenal	Costa Rica	2009	2179	2849	Erupted
Barva	Costa Rica	1869	4660	13938	In Repose
Irazu	Costa Rica	2015	2001	2025	In Repose
Miravalles	Costa Rica	1948	4392	12519	In Repose
Poás	Costa Rica	2054	2120	2492	In Repose
Rincón de la Vieja	Costa Rica	2021	2086	2388	In Repose
Turrialba	Costa Rica	1875	2505	4631	In Repose
Baru	Panama	1552	2038	3660	In Repose
Azufra	Columbia	-916	-218	2143	In Repose
Cerro Bravo	Columbia	1728	2264	4075	In Repose
Cumbal	Columbia	1930	1971	2123	In Repose
Dona Juana	Columbia	1899	3477	8725	In Repose
Galeras	Columbia	2041	2101	2411	In Repose
Huila	Columbia	2009	2114	2466	Forecasted
Purace	Columbia	2001	2037	2236	In Repose
Nevado Del Ruiz	Columbia	2015	2267	3174	In Repose
Nevado Del Tolima	Columbia	1949	2891	6041	In Repose
Kick-'em Jenny	West Indies	2009	2004	2017	Forecasted
La Soufriere	West Indies	1997	2245	3141	In Repose
Liamuiga	West Indies	1849	2343	4004	In Repose
Mt. Pelée	West Indies	1981	2049	2450	In Repose
Soufriere	West Indies	2000	2117	2576	In Repose
Soufriere Hills	West Indies	2009	2026	2089	Erupted

ACTIVE VOLCANO STATUS OF THE CARIBBEAN

AS OF: 3 March 2009

<u>Volcano</u>	<u>Country</u>	<u>Next Forecast Year</u>	<u>Yr. Of =>50%</u>	<u>Yr. Of =>95%</u>	<u>Current Status</u>
The Quill	West Indies	403	2248	8387	In Repose

INTLVRC's eruption forecasting programme, *ERUPTION Pro 10.7*, the only known long-range reasonably accurate forecasting programme of its kind in the world, is currently monitoring 504 volcanoes throughout the world. You can learn more about all current eruptions (global) plus much, much more at the INTLVRC website located at the URL of: <http://www.intlvrc.org>.

The interpretation of the Year volcano is next forecasted to erupt, Year volcano is forecasted to erupt with $\geq 50\%$ probability and Year volcano is forecasted to erupt with $\geq 95\%$ probability is as follows: Let us use, for example, volcano **Nevado Del Ruiz** in Columbia. It is currently forecasted (with current data loaded) to erupt again in 2015. If it does **not** erupt and if the year reaches 2267, then **Ruiz** would now go to an $\geq 50\%$ probability of an eruption. If **Ruiz** does **not** erupt when the year reaches 3174, then **Ruiz** would go to an $\geq 95\%$ probability of an eruption. Of course if **Ruiz** does erupt then new forecast year calculations would be rendered by *ERUPTION Pro 10.6*.

In some cases, one will find that the year that a particular volcano is next forecasted to erupt is greater than say the year a volcano is forecasted to erupt with $\geq 50\%$. For example, **San Cristobal** in Nicaragua is currently forecasted to erupt in 2025 but forecasted at $\geq 50\%$ probability in the year 2009. This seeming anomaly is due to the current data that is loaded into the computer. As the data changes, sometimes on a daily basis, the forecasted years will sometimes change on a daily basis as well. As new data is received and loaded into the *ERUPTION Pro 10.7* database, so are the forecast year calculations revised.

NOTE: This document report will be updated from time-to-time as necessary to reflect the latest outputs from the *ERUPTION Pro 10.7* database.