

# 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**  
**e-mail: swvrc@usa.net**

## CARIBBEAN VOLCANIC ACTIVITY & FORECAST REPORT

**2 January 2008**

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 10.6**, 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: Of **10** volcanoes originally forecasted, **3** have confirmed eruptions so far. With no misses, the overall accuracy for year **2008** is **30.00%** to date.

**KEY:**

|                               |  |
|-------------------------------|--|
| <b>Volcano =</b>              | <b>Name of volcano</b>   |
| <b>Country =</b>              | <b>Country of volcano location</b>                                   |
| <b>Next Forecasted Year =</b> | <b>Year volcano is next forecasted to erupt</b>                      |
| <b>Yr. Of =&gt;50% =</b>      | <b>Year volcano is forecasted to erupt with =&gt;50% probability</b> |
| <b>Yr. Of =&gt;95% =</b>      | <b>Year volcano is forecasted to erupt with =&gt;95% probability</b> |
| <b>Current Status =</b>       | <b>Current status of the volcano at this time</b>                    |

**ACTIVE VOLCANO STATUS OF THE CARIBBEAN**

AS OF: 2 January 2008

| <u>Volcano</u>           | <u>Country</u> | Next Forecast<br><u>Year</u> | Yr. Of<br><u>=&gt;50%</u> | Yr. Of<br><u>=&gt;95%</u> | <u>Current<br/>Status</u> |
|--------------------------|----------------|------------------------------|---------------------------|---------------------------|---------------------------|
| Ceboruco                 | Mexico         | 1874                         | 2053                      | 2661                      | In Repose                 |
| <b>Colima</b>            | Mexico         | 2076                         | <b>2008</b>               | 2416                      | <b>Erupted</b>            |
| El Chichon               | Mexico         | 1998                         | 2193                      | 2860                      | In Repose                 |
| Jocotitlan               | Mexico         | 1272                         | 4648                      | 15871                     | In Repose                 |
| Michoacan-<br>Guanajuato | Mexico         | 1951                         | 2753                      | 5445                      | In Repose                 |
| Pico De<br>Orizaba       | Mexico         | 1712                         | 1728                      | 1867                      | Overdue                   |
| Pinacate                 | Mexico         | 1948                         | 1961                      | 2053                      | In Repose                 |
| <b>Popocatepetl</b>      | Mexico         | <b>2008</b>                  | 2137                      | 2566                      | <b>Erupted</b>            |
| San Martin               | Mexico         | 1944                         | 2196                      | 3076                      | In Repose                 |
| Socorro                  | Mexico         | 1997                         | 2015                      | 2088                      | In Repose                 |
| Tacana                   | Mexico         | 1990                         | 2012                      | 2100                      | In Repose                 |
| Tres<br>Virgenes         | Mexico         | 1861                         | 1947                      | 2249                      | In Repose                 |
| Acatenango               | Guatemala      | 1977                         | 2250                      | 3175                      | In Repose                 |
| Almolonga                | Guatemala      | 1821                         | 2097                      | 3024                      | In Repose                 |
| Atitlan                  | Guatemala      | 1873                         | 1882                      | 1971                      | Overdue                   |
| <b>Fuego</b>             | Guatemala      | 2057                         | <b>2008</b>               | 2024                      | <b>Forecasted</b>         |
| <b>Pacaya</b>            | Guatemala      | 2008                         | 2030                      | 2108                      | <b>Forecasted</b>         |
| <b>Santa Maria</b>       | Guatemala      | 2015                         | <b>2008</b>               | 2035                      | <b>Forecasted</b>         |
| Tajumulco                | Guatemala      | 1871                         | 1927                      | 2143                      | 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                      | 2433                      | In Repose                 |
| Masaya                   | Nicaragua      | 2030                         | 2165                      | 2704                      | In Repose                 |
| Momotombo                | Nicaragua      | 2013                         | 2151                      | 2676                      | In Repose                 |
| <b>San Cristobal</b>     | Nicaragua      | 2022                         | <b>2008</b>               | 2081                      | <b>Forecasted</b>         |

**ACTIVE VOLCANO STATUS OF THE CARIBBEAN**

AS OF: 2 January 2008

| <u>Volcano</u>             | <u>Country</u> | <u>Next Forecast<br/>Year</u> | <u>Yr. Of<br/>=&gt;50%</u> | <u>Yr. Of<br/>=&gt;95%</u> | <u>Current<br/>Status</u> |
|----------------------------|----------------|-------------------------------|----------------------------|----------------------------|---------------------------|
| Telica                     | Nicaragua      | 2036                          | 2016                       | 2047                       | In Repose                 |
| <b>Arenal</b>              | Costa Rica     | <b>2008</b>                   | 2179                       | 2749                       | <b>Erupted</b>            |
| Barva                      | Costa Rica     | 1869                          | 4659                       | 13936                      | In Repose                 |
| Irazu                      | Costa Rica     | 2015                          | 2001                       | 2025                       | In Repose                 |
| Miravalles                 | Costa Rica     | 1948                          | 4392                       | 12517                      | In Repose                 |
| Poás                       | Costa Rica     | 2051                          | 2120                       | 2500                       | In Repose                 |
| Rincón de<br>la Vieja      | Costa Rica     | 2021                          | 2086                       | 2388                       | In Repose                 |
| Turrialba                  | Costa Rica     | 1875                          | 2505                       | 4631                       | In Repose                 |
| Baru                       | Panama         | 1552                          | 2037                       | 3658                       | In Repose                 |
| Azufra                     | Colombia       | -916                          | -219                       | 2142                       | In Repose                 |
| Cerro Bravo                | Colombia       | 1728                          | 2264                       | 4074                       | In Repose                 |
| Cumbal                     | Colombia       | 1930                          | 1971                       | 2122                       | In Repose                 |
| Dona Juana                 | Colombia       | 1899                          | 3476                       | 8724                       | In Repose                 |
| Galeras                    | Colombia       | 2038                          | 2102                       | 2421                       | In Repose                 |
| <b>Huila</b>               | Colombia       | <b>2008</b>                   | 2165                       | 2693                       | <b>Forecasted</b>         |
| Purace                     | Colombia       | 2001                          | 2037                       | 2236                       | In Repose                 |
| Nevado Del<br>Ruiz         | Colombia       | 2015                          | 2267                       | 3174                       | In Repose                 |
| Nevado Del<br>Tolima       | Colombia       | 1949                          | 2891                       | 6041                       | In Repose                 |
| <b>Kick-'em<br/>-Jenny</b> | West Indies    | <b>2008</b>                   | 2004                       | 2018                       | <b>Forecasted</b>         |
| La Soufriere               | West Indies    | 1997                          | 2245                       | 3141                       | In Repose                 |
| Liamuiga                   | West Indies    | 1849                          | 2342                       | 4003                       | In Repose                 |
| Mt. Pelée                  | West Indies    | 1981                          | 2049                       | 2450                       | In Repose                 |
| Soufriere                  | West Indies    | 2000                          | 2117                       | 2576                       | In Repose                 |
| <b>Soufriere<br/>Hills</b> | West Indies    | <b>2008</b>                   | 2027                       | 2094                       | <b>Forecasted</b>         |

## ACTIVE VOLCANO STATUS OF THE CARIBBEAN

AS OF: 2 January 2008

| <u>Volcano</u> | <u>Country</u> | <u>Next Forecast<br/>Year</u> | <u>Yr. Of<br/>=&gt;50%</u> | <u>Yr. Of<br/>=&gt;95%</u> | <u>Current<br/>Status</u> |
|----------------|----------------|-------------------------------|----------------------------|----------------------------|---------------------------|
| The Quill      | West Indies    | 403                           | 2247                       | 8386                       | In Repose                 |

INTLVRC's eruption forecasting programme, *ERUPTION Pro 10.6*, the only known long-range reasonably accurate forecasting programme of its kind in the world, is currently forecasting 502 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 2022 but forecasted at  $\geq 50\%$  probability in the year 2008. 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 10.6* 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 10.6* database.