

**LA SOUFRIÈRE VOLCANO: INFORMATION NOTE #3 – FRIDAY 12<sup>TH</sup> FEBRUARY 2021**



Image: Growing Dome at La Soufrière Volcano, St. Vincent & the Grenadines  
Source: *Trinidad & Tobago Weather Centre, 2021 (www.ttweathercenter.com)*

**MESSAGE:**

The new dome at the La Soufrière Volcano continues to grow with lateral spreading of approximately fifteen (15) metres towards the north-west and south-east. The volcano also continues to produce visible gas and steam eruption, mostly at the contact areas between the pre-existing 1979 dome and the 2020-2021 dome, as well as the top of the new dome.

**ALERT LEVEL:**

Orange

**NO EVACUATION ORDERS HAVE BEEN ISSUED**

**SITUATION:**

Since our previous information note on Monday 11<sup>th</sup> January 2021, the alert level of the La Soufrière Volcano remains at Orange. The volcano continues to experience an effusive eruption, as magma is being exuded on the surface at extreme temperatures. It also continues to produce visible gas and steam eruption and is forming a new volcanic dome, which continues to increase in size. The new dome continues to grow with lateral spreading of approximately fifteen (15) metres towards the north-west and south-east. The volcano also continues to produce visible gas and steam eruption, mostly at the contact areas between the pre-existing 1979 dome and the 2020-2021 dome, as well as the top of the new dome.

The University of the West Indies (UWI) Seismic Research Centre (SRC) has indicated that based on the complex patterns of previous eruptions, it is too early to conclude that the current activity would remain a simple dome extrusion event, as there is still a possibility of a shift to an explosive phase. The centre has also informed that a definitive prognosis on the current unrest episode cannot be provided until further



data analysis is completed. Satellite data obtained by various collaborating institutions confirm that the dome continues to grow.

On 1 February 2021, a team led by Dr. Thomas Christopher took gas samples and installed equipment at the volcanic site. The team deployed and retrieved volcanic gas samples from the volcano's new dome using filter packs. This process included filters being dipped into a solution to cause the gas of interest to react with the relevant filter. The filters were then analyzed to detect the presence and concentration of magmatic gases such as Hydrogen Chloride (HCl), Hydrogen Fluoride (HF), Hydrogen Sulfide (H<sub>2</sub>S) and Sulphur Dioxide (SO<sub>2</sub>). The team has informed that monitoring the chemistry of volcanic gases provides clues on how deep within the earth the gases are being emitted, which can help scientists better understand how the eruption may unfold.

To date, the UWI SRC team has informed that it is too premature to conclude that the current activity will remain a simple dome extrusion event, based on the complicated patterns of previous eruptions. Therefore, there is still a chance of a volcanic explosion. A conclusive diagnosis will only be provided when further data analysis is completed.

The National Emergency Management Organisation (NEMO) of St. Vincent and the Grenadines continues to caution nearby residents to stay away from La Soufrière's immediate vicinity, as sulphur-rich gases continue to be released into the atmosphere, during this time. NEMO has also advised that there has been no *explosive* eruption at the La Soufrière Volcano.

*Source: Source: CDEMA Situation Report #5, 2021*

***The following update presents information from the Caribbean Disaster and Emergency Management Agency (CDEMA) participating states or member countries:***

#### **ORANGE ALERT LEVEL:**

An Orange Level alert means that there is highly elevated seismicity or fumarolic activity, or both, or other highly unusual symptoms. Eruptions may occur with less than 24 hours' notice. Monitoring systems are continuously manned and there is regular visual inspection of potential vent areas as well as continuous ground deformation and hydrothermal monitoring.

#### **UPDATES FROM IMPACTED CDEMA PARTICIPATING STATE:**

##### **St. Vincent and the Grenadines:**

1. NEMO's recent bulletins have advised that there was NO 'explosive' eruption at the La Soufrière volcano. La Soufrière continues to have effusive eruptions, as hot magma reaches the surface at extreme temperatures. This appears in the night as fire or a bright red glow above the crater. As the dome grows higher and closer to the rim of the crater this phenomenon will continue to be visible on clear nights.
2. The new dome continues to grow with lateral spreading of material towards the north and south, with a preferred northward growth observed.



3. Gas measurements were performed using a Multi-Gas Instrument and a filter pack. The Multi-Gas measurements were successful and showed the presence of Sulfur dioxide (SO<sub>2</sub> gas coming from the volcano. The filter packs were used to measure gas species such as hydrogen chloride (HCl), Hydrogen fluoride (HF), Sulfur dioxide (SO<sub>2</sub>) and Hydrogen Sulfide (H<sub>2</sub>S) will need to be sent abroad for analysis.
4. Sulfur dioxide (SO<sub>2</sub>) gas was detected in the eruption for the first time on Monday, February 1, 2021. The absence of Sulfur dioxide in the early stages of the eruption was due to the interaction of sulfur dioxide with the groundwater as the sulfur dioxide was dissolving in the groundwater. Since Sulfur dioxide (SO<sub>2</sub>) gas is now coming out of the volcano, this suggests that the groundwater is drying up.
5. A camera was installed at the summit of the volcano, on January 24 to monitor changes of the dome, was adjusted to allow clearer images to be received.
6. Four (4) GPS stations are currently streaming data to SRC.
7. The Belmont Observatory is now occupied permanently by the Lead Scientist and the monitoring network is being done on a 24-hour basis.
8. There has been damage to vegetation, from acidic gases emitted from the growing dome, downslope of the summit continues to be observed.
9. An investigation was conducted at the Wallibou Hot Spring area on Sunday 7th February 2021 based on a report of irregular temperatures and unusual gas smells there. Gas sampling was done by Dr. Thomas Christopher and the temperature was taken at different points and some liquid samples were collected for further analysis.
10. The deformation network is functional. Successful hits of the Electronic Distance Measurement (EDM) target were recorded on the volcano rim from Richmond Vale, Troumaca, Rose Hall, Belmont, and Cherry Hill Chateaubelair. Base line data is being collected. The EDM Network is used to assist with measurements of deformation associated with the flanks of the volcano.
11. NEMO continues to remind the SVG public that no evacuation order or notice had been issued.
12. NEMO continues to appeal to the public to desist from visiting the La Soufrière Volcano, especially going into the crater, since doing so is extremely dangerous.

#### **CARIBBEAN DISASTER AND EMERGENCY MANAGEMENT AGENCY (CDEMA) ACTIONS:**

The CDEMA Coordinating Unit (CU) continues to operate in accordance with the standard operating procedures (SOPs) of the Regional Coordination Plan (RCP) which includes maintaining contact with the threatened states and Regional Response Mechanism (RRM) partners.

1. The CDEMA Coordinating Unit continues to undertake technical consultations with the UWI Seismic Research Centre on the status of La Soufrière volcano.
2. The Regional Coordination Plan was activated at 6:00 PM December 29, 2020.
3. The Volcano Response Plan, the Regional Coordinating Centre (RCC), the Regional Logistics Plan (RLP) and the Regional Response Mechanism were activated.
4. The CDEMA Coordinating Unit undertook consultations with the National Disaster Coordinator of the Subregional Focal Point in Barbados which remains ready to provide support.
5. In accordance with the Volcanic Annex of the RCP, the following Regional Response Mechanism (RRM) Teams have been placed on ALERT:
  - I. CARICOM Disaster Assessment and Coordination (CDAC)

- II. CARICOM Operational Support Team (COST)
  - III. Rapid Needs Assessment Team (RNAT)
  - IV. Caribbean Disaster Relief Unit (CDRU)
  - V. Regional Urban Search and Rescue Teams (RSART)
6. The CDEMA CU was in constant contact with the SVG NDO and was providing technical assistance to the SVG National Emergency Management Organisation (NEMO) by testing the Emergency Telecommunications between the CDEMA CU, SVG, SRFP (Barbados and the Participating States; the Volcano Hazard Emergency and Logistics Planning and the GeoCRIS mapping – with support from the Copernicus Emergency Mapping Service (EMS)).
  7. The CDEMA Coordinating Unit was providing technical assistance to the SVG National Emergency Management Organisation (NEMO) in the following areas:
    - I. Evacuation Planning
    - II. Logistics Planning
  8. The CDEMA CU convened a Brief and Table-Top Exercise (TTX) on the revised SVG Volcano Emergency Plan & SOP document on Friday, January 29, 2021.
  9. The Core-Coordination Group on Volcanic Hazards (CCG-VH) has been established as a thematic coordinating cell of the Regional Coordination Centre and has convened twice since January 2021. The CCG-VH which comprises key representatives of political, scientific and technical institutions in the region has agreed to undertake the following:
    - I. To work in support of the National Disaster Office of the threatened or impacted State under the scientific guidance of the UWI Seismic Research Centre or other designated scientific entity.
    - II. To provide guidance for the provision of regional and international assistance to affected populations, with a focus on preparedness actions to address possible effects/impacts of the volcanic hazard.
  10. A meeting of the Caribbean Development Partners Group (CDPG) was convened on Thursday January 28th, 2021. The date of the next meeting of the CDPG would be circulated to the group.
  11. The CU will continue to monitor the situation in collaboration with the UWI Seismic Research Centre, the St. Vincent and the Grenadines NEMO and the national disaster management offices of Participating States in close proximity to the volcano and will provide updates to the RRM partners as necessary.

The CDEMA CU urges all Participating States and members of the RRM to monitor the progress of this volcanic event. The public should continue to monitor the releases from their local national disaster management office.

Visit the [UWI Seismic Research Centre](#) webpage for more information on the La Soufrière volcanic activity.

*Source: Effusive Eruption at La Soufrière Volcano, St. Vincent, CDEMA Situation Report #5, as of 8 p.m. (AST) on February 9, 2021.*