

EFFUSIVE ERUPTION AT LA SOUFRIÈRE VOLCANO, ST. VINCENT

SITUATION REPORT No. 4

AS OF 8:00 PM ON JANUARY 22, 2021

Volcanic Activity Continues at La Soufrière, St. Vincent Alert Level Remains at Orange

LOCATION:

La Soufrière Volcano, Saint Vincent and The Grenadines

PRESENT ACTIVITY:

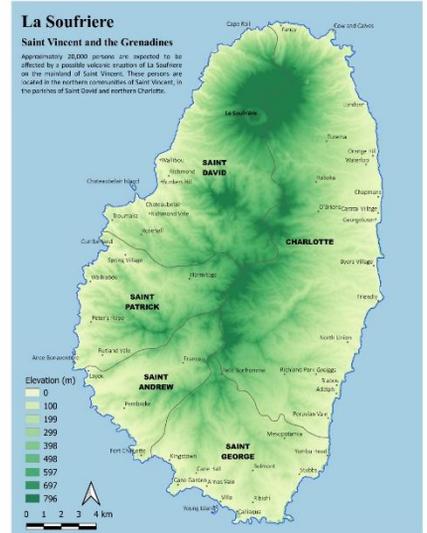
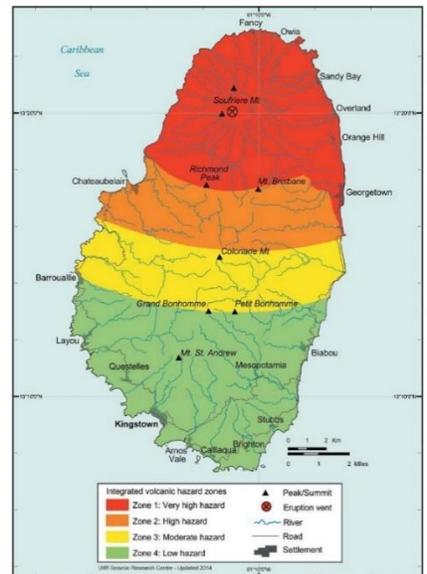
Effusive eruption, ongoing fumarolic activity, continued growth of the new volcanic dome, and increased seismic activity

ALERT LEVEL: ORANGE

SITUATION OVERVIEW

On 29th December 2020 the alert level for the La Soufrière volcano in St. Vincent and the Grenadines was elevated to **Orange** because of increased activity at the site. The volcano has had an effusive eruption, with visible gas and steam eruption and the formation of a new volcanic dome. The volcano continues to exude magma on the surface and gas emissions can be observed from the Belmont Observatory. A UWI Seismic Research Centre team is currently in St. Vincent to support monitoring and data collection and analysis.

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.



**No Evacuation Orders
have been issued. Access to the
volcano is strictly prohibited.**

SITUATION cont'd

The volcano continues to exude magma on the surface. Steam can still be observed from the Belmont Observatory. The new dome that emerged on December 27th, 2020, on the south-west perimeter of the existing dome, continues to grow within the crater. It now has an ellipsoid shape with growth expanding in a westerly direction. An area of burnt vegetation continues to creep downslope and has expanded towards the top eastern rim of the crater. Persons living in areas close to the volcano should expect strong sulphur smells for several days to weeks, depending on changes in wind direction

The UWI SRC has advised that, based on the complex patterns of previous eruptions, it is too early to conclude that the current activity will remain a simple dome extrusion event. There is still a possibility of a shift to an explosive phase. A definitive prognosis on the current unrest episode cannot be provided until further data analysis is completed.

Dr. Thomas Christopher and Dr. Adam Stinton of the Montserrat Volcano Observatory (MVO) joined the SRC team on January 13th, 2021. Visual observations were completed and an aerial survey of the dome was conducted by Dr. Stinton. Thermal imaging undertaken during these recent field visits has recorded temperatures of 590 °C on the actively growing front of the dome (internal temperatures may be higher). A two-man team also took samples of the growing lava dome.

The aerial surveys and other data will be used will be used to create a detailed model of the dome. The model will aid in mapping the growth and volume of the lava dome in the future. Aerial surveys were facilitated through a 7-day support mission from CalvinAir Helicopters, which ended on January 20th 2021.

The UWI SRC continues to work with NEMO, St. Vincent and the Grenadines to strengthen the monitoring networks around the volcano. Instrumentation Engineer Lloyd Lynch and the Electronics Team completed the installation of the Fancy Seismic Station on January 21st, 2021. Equipment was also installed to place a camera at the crater rim to monitor dome growth.



Aerial Photos of La Soufriere, St. Vincent taken on 3rd, 9th and 18th January 2021 respectively. (Source: NEMO St. Vincent and the Grenadines <https://www.facebook.com/nemosvg/>)

Updates from Impacted CDEMA Participating State

The Caribbean Disaster Emergency Management Agency (CDEMA) has been in regular contact with the National Disaster Coordinator in St. Vincent and the Grenadines and the following was reported:



ST. VINCENT AND THE GRENADINES

1. NEMO's recent bulletins have advised that there was NO 'explosive' eruption at the La Soufrière volcano at this time. 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. Professor Richard Robertson and Dr. Thomas Christopher briefed Cabinet on January 21st on the state of the La Soufrière Volcano and the monitoring operation.
3. Members of staff of NEMO, and Professor Richardson Robertson of the UWI SRC, were in the villages of Chateaubelair and Fitz-Hughes on the Leeward side of the island updating residents via PA system, on current activities at the volcano, preparedness in the family and the meeting points in each community in the event that an evacuation order is issued. This activity will continue in the Petit Bordel, Rose Bank, Rose Hall and Troumaca areas.
4. On Saturday January 23rd, NEMO will be doing a drive-through in the areas of the Red Volcano Hazard Zone, from Georgetown to Magum, to update residents on the state of the La Soufriere Volcano, and to provide information on evacuation procedures and individual preparedness.
5. NEMO continues to remind the SVG public that no evacuation order or notice has been issued.
6. 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.

THREAT LEVELS

Below is a summary of the threat alert levels for the La Soufriere volcano:

LA SOUFRIERE VOLCANO HAZARD ALERT LEVEL

Alert Level	Symptoms	Action Scientist	Action: Civil Authorities
Green	Volcano is quiescent (quiet): seismic and fumarolic (steam vent) activities are at or below the historical level at this volcano. No other unusual activity has been observed.	Normal monitoring	Undertake ongoing public awareness campaign and work on volcanic emergency plans.
Yellow	Volcano is restless: seismic or fumarolic activity or both are above the historical level at this volcano or other unusual activity has been observed (this activity will be specified at the same time that the alert level is raised).	Monitoring system will be brought up to full capability. Civil authorities alerted.	Undertake ongoing public awareness campaigns and work on volcanic emergency plans. Advise vulnerable communities of evacuation procedures in the event of an emergency.
Orange	Highly elevated level of seismicity or fumarolic activity or both or other highly unusual symptoms. Eruptions may occur with less than 24 hours notice.	Monitoring system continuously manned. Regular visual inspection of potential vent areas. Continuous ground deformation and hydrothermal monitoring. Daily assessment reports to civil authorities.	Coordinate evacuation (if necessary) based on hazard zones. Entry to the restricted access zone by scientist will be permitted after evacuation on a case-by-case basis. Organize regular radio and television announcements.
Red	Eruption is in progress or may occur without further warning	Measurements as permitted by safety condition. Civil authorities advised continuously.	Coordinate continued evaluation as necessary. Organize regular radio and television announcements.

Caribbean Disaster 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 its Regional Response Mechanism (RRM) partners.

CDEMA's actions to date:

- I. The CDEMA Coordinating Unit has undertaken technical consultations with the UWI Seismic Research Centre (SRC) on the status of La Soufriere volcano.
- II. The Regional Coordination Plan (RCP) was activated at 6:00 PM December 29, 2020.
- III. The Regional Coordination Centre (RCC) was activated at 9:30 AM December 30, 2020.
- IV. The CDEMA Coordinating Unit (CU) has also undertaken consultations with the National Disaster Coordinator of the Subregional Focal Point in Barbados which stands ready to provide support.
- V. In accordance with the Volcanic Annex of the RCP, the following Regional Response Mechanism (RRM) Teams have been placed on ALERT:
 - a) CARICOM Disaster Assessment and Coordination (CDAC)
 - b) CARICOM Operational Support Team (COST)
 - c) Rapid Needs Assessment Team (RNAT)
 - d) Caribbean Disaster Relief Unit (CDRU)
- VI. Emergency telecommunications tests between the CDEMA CU and St. Vincent and the Grenadines (SVG) are ongoing.
- VII. The CDEMA CU is providing technical assistance to the SVG National Emergency Management Organization (NEMO) in the following areas:
 - a) Evacuation Planning
 - b) Logistics Planning
- VIII. The CDEMA CU secured a helicopter to assist the Government of St. Vincent and the Grenadines through the support of the UK Foreign, Commonwealth & Development Office (FCDO). The helicopter asset is being employed to support the SRC scientists with observations of the volcano and the transportation of equipment for installation, amongst other things. The rotary air support mission concluded on 20th January 2021.

Caribbean Disaster Emergency Management Agency (CDEMA) Actions

- IX. The Core-Coordination Group on Volcanic Hazards (CCG-VH) has been established as a thematic coordinating cell of the Regional Coordination Centre and had its first meeting on January 7th 2021. The CCG-VH, which comprises key representatives of political, scientific and technical institutions in the region, has agreed to undertake the following:
- a) 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, and
 - b) 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.
- X. The second meeting of the CCG-VH is scheduled to take place on **Tuesday January 26th, 2021.**
- XI. A meeting of the Caribbean Development Partners Group (CDPG) is scheduled to take place on **Thursday January 28th, 2021.**
- XII. 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.

List of preparatory actions being undertaken by the RRM Partners



LOGISTICS SUPPORT

- The UK Foreign, Commonwealth & Development Office (FCDO) supported the procurement of helicopter, services for a 7-day period, to aid the SRC team in transporting staff and equipment, conducting aerial investigations, photogrammetry and gas measurements, among other scientific requirements valued at £51,000.
- The Regional Security System (RSS) C26 aircraft provided transportation support for SRC team deployment and the pre-positioning of relief supplies (Dignity Kits) in the affected state.
- The World Food Programme (WFP) preparedness and response mechanisms are on standby to assist, including logistical equipment, food kits and cash transfers.



AGRICULTURE & FOOD SECURITY

- The UN Food and Agriculture Organisation (FAO) is supporting the Ministry of Agriculture in their plans for evacuation of livestock.



SECURITY

- An Regional Security System (RSS) Warning Order has been issued to its Member States to standby for deployment if requested by the impacted State.



RELIEF SUPPORT

- The United Nations Population Fund (UNFPA) has donated 400 Dignity Kits to be pre-positioned in St. Vincent and the Grenadines in the event of an escalation of the emergency.

List of preparatory actions being undertaken by the RRM Partners cont'd

GENERAL COORDINATION

- The European Commission has activated the Copernicus Emergency Mapping Service to produce mapping and monitoring of La Soufriere Volcano via its Rapid Mapping Service and Risk and Recovery Mapping Service.
- The Caribbean Development Bank (CDB) has expressed its commitment to support the Government of SVG and CDEMA, and is on standby to provide assistance as needed.
- The International Federation of Red Cross (IFRC) and Red Crescent Societies (RCS) has been in contact with the St. Vincent Red Cross Society and is on standby to provide assistance as requested.
- The United Nations Development Programme (UNDP) has alerted its National Focal Points and is closely monitoring the situation.
- The United Nations Population Fund (UNFPA) has contacted its National Focal Points and is available to provide support in key areas, including the prevention of gender-based violence in emergencies.
- The United States Agency for International Development (USAID) Bureau for Humanitarian Assistance (BHA) Disaster Risk Management Specialists are in contact with the National Disaster Coordinator in St. Vincent. They are also in contact with regional partners and on standby to provide assistance.
- The Caribbean Water And Wastewater Association (CWWA) indicated that its resources are available to provide support as needed.
- The World Bank (WB) Group has been in contact with the Ministry responsible for Economic Planning and is on standby to provide support as requested.
- The Foreign and Commonwealth Office (FCO) UK has been in contact with NEMO and identified the UK Commission in St. Vincent & the Grenadines as the contact for direct requests for assistance.
- The Government of Canada (GAC) is closely monitoring the developing situation as is poised to render support as needed.