



REPUBLIC OF THE PHILIPPINES
NATIONAL DISASTER RISK REDUCTION AND MANAGEMENT COUNCIL

National Disaster Risk Reduction and Management Center, Camp Aguinaldo, Quezon City, Philippines

NDRRMC UPDATE

Update on Alert Status and Activities of Bulusan, Kanlaon and Mayon Volcanoes

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SITUATION OVERVIEW

A. ALERT STATUS OF BULUSAN VOLCANO

Bulusan Volcano's seismic monitoring network recorded **seven (7) volcanic earthquakes** during the past 24 hours. **Weak emission of white steam-laden plumes that rose to 50 meters from the southeast vents before drifting west-northwest was observed.** Precise leveling data obtained on **February 19 – March 1, 2018** indicated a slight deflation of the edifice, consistent with short-term deflationary trends in both tilt and continuous GPS data in the last quarter of 2017. However, the edifice remains slightly inflated since July 2016 based on continuous GPS data.

Alert Level 1 (abnormal) status remains in effect over Bulusan Volcano, which means that it is currently in a state of unrest probably driven by hydrothermal processes that could generate steam driven or phreatic eruptions. Local government units and the public are reminded that entry into the 4-kilometer radius Permanent Danger Zone (PDZ) is strictly prohibited and that vigilance in the Extended Danger Zone (EDZ) must be exercised due to the increased possibilities of sudden and hazardous phreatic eruptions. Civil aviation authorities must also advise pilots to avoid flying close to the volcano's summit as ash from any sudden phreatic eruption can be hazardous to aircraft. Furthermore, people living within valleys and along river/stream channels especially on the southeast, southwest and northwest sector of the edifice should be vigilant against sediment-laden stream flows and lahars in the event of heavy and prolonged rainfall. DOST-PHIVOLCS is closely monitoring Bulusan Volcano's condition and any new development will be communicated to all concerned stakeholders.

B. ALERT STATUS OF KANLAON VOLCANO

Kanlaon Volcano's seismic monitoring network recorded **one (1) volcanic earthquake** during the past 24 hours. **Wispy to weak emission of white steam-laden plumes that rose 200 meters from the summit before drifting southwest was observed.** Ground deformation data from continuous GPS measurements indicate a more pronounced inflation of the edifice since December 2015, signifying pressurization deep beneath the edifice. Sulfur dioxide (SO₂) emission was measured at an average of **626 tonnes / day on 01 March 2018.**

Alert Level 2 status prevails over Kanlaon Volcano, which means that the volcano is undergoing a moderate level of unrest due to probable intrusion of magma at depth that may or may not lead to a magmatic eruption. The local government units and the public are strictly reminded that entry into the 4-kilometer radius Permanent Danger Zone (PDZ) is strictly prohibited due to the further possibilities of sudden and hazardous steam-driven or phreatic eruptions. Civil aviation authorities must also advise pilots to avoid flying close to the volcano's summit as ejecta from any sudden phreatic eruption can be hazardous to aircraft. DOST-PHIVOLCS is closely monitoring Kanlaon Volcano's activity and any new development will be relayed to all concerned.

C. ALERT STATUS OF MAYON VOLCANO

This serves as a notice for the lowering of Mayon Volcano's status from Alert Level 4 (hazardous eruption imminent) to Alert Level 3 (decreased tendency towards hazardous eruption).

Mayon Volcano's condition in the past week has been characterized by a general decline in unrest reflected by moderate seismicity and degassing, deflation of the edifice and a decrease in eruptive activity at the summit crater. These observations are supported by the following monitoring parameters:

1. Activity has diminished to sporadic degassing with associated ash plumes, weak lava fountaining, quiet lava flow and lava collapse, interspersed with two to four days of relative quiescence. The decline in the intensity and frequency of events suggests a gradual depletion of eruptible magma at the shallow levels of the edifice.
2. Seismic activity has been dominated by low frequency events associated with degassing at the summit and signals of rockfall and small-volume pyroclastic density currents or PDCs generated by the collapsing front and margins of lava flows on the Miisi, Bonga and Basud Gullies and intermediary channels. This is reflected in the diminishing overall seismic energy release from the volcano despite the infrequent occurrence of effusive activity at the summit crater. In the past 24 hours, a total of only four (4) volcanic earthquakes and forty-four (44) rockfall events were recorded by the seismic monitoring network.
3. Ground deformation data from Precise Leveling (PL) surveys and real-time electronic tilt continue to record deflation of the lower slopes that began on 20 February 2018. The downtrend in ground deformation follows a period of continuous inflation that began in October-November 2017 and indicates a decrease in magma recharge from deep to shallow levels of the edifice. However, based on medium-term PL data, the volcano is still inflated relative to January 2010 baselines.
4. Measured magmatic sulfur dioxide or SO₂ flux throughout the eruption has varied from a maximum of 4,270 tonnes/day on 21 February to 1,400 tonnes/day on 3 March. These concentrations are significantly lower than those measured for past eruptions (e.g. up to >8,000 tonnes/day in 2009) and are consistent with batches of partially degassed magma that have incrementally risen to shallow depths within the edifice. SO₂ emission was measured at an average of 2,560 tonnes/day yesterday, 5 March 2018.

In view of the above observations, PHIVOLCS-DOST is lowering the alert status of Mayon from Alert Level 4 to Alert Level 3 to reflect the overall decrease in the level of unrest. Alert Level 3 means that there is a decreased tendency towards hazardous explosive eruption

BUT should not be interpreted that unrest has ceased. The volcano can be expected to continue generating volcanic earthquakes, magmatic gas output and weak surface processes such as sporadic degassing and lava effusion events, steam-driven explosions, rockfall and PDCs, while shallow remnant magma rests within the edifice. Should the potential for hazardous explosive eruption be forewarned by an uptrend or pronounced change in monitoring parameters, the Alert Level may be raised back to Alert Level 4. Conversely, should there be a persistent downtrend in monitoring parameters, then the Alert Level will be further lowered to Alert Level 2.

PHIVOLCS-DOST reminds the public that at Alert Level 3, sudden explosions, lava collapses, PDCs and ashfall can still occur and threaten areas in the upper to middle slopes of Mayon. PHIVOLCS-DOST recommends that entry into the six kilometer-radius Permanent Danger Zone or PDZ and a precautionary seven kilometer-radius Extended Danger Zone or EDZ in the south-southwest to east-northeast sector, stretching from Anoling, Camalig to Sta. Misericordia, Sto. Domingo, must be strictly prohibited. People residing close to these danger areas are also advised to observe precautions associated with rockfalls, PDCs and ashfall. Active river channels and those perennially identified as lahar prone areas in the southern and eastern sectors should also be avoided especially during bad weather conditions or when there is heavy and prolonged rainfall. Civil aviation authorities must advise pilots to avoid flying close to the volcano's summit as airborne ash and ballistic fragments from sudden explosions and PDCs may pose hazards to aircrafts. PHIVOLCS-DOST is closely monitoring Mayon Volcano's activity and any new significant development will be immediately communicated to all stakeholders.

II. ACTIONS TAKEN

1. NDRRMC Operations Center prepared NDRRMC Advisory and Update, and disseminated the same to OCD Regional Centers V, VI and VII through facsimile and NDRRMC website in order to closely monitor the situation and take appropriate actions for any new development.
2. Concerned NDRRMC member-agencies were provided with a copy of the Memorandum for the SND.
3. DOST-PHIVOLCS is closely monitoring the activities of Bulusan, Kanlaon and Mayon Volcanoes and any new development will be relayed to all concerned.