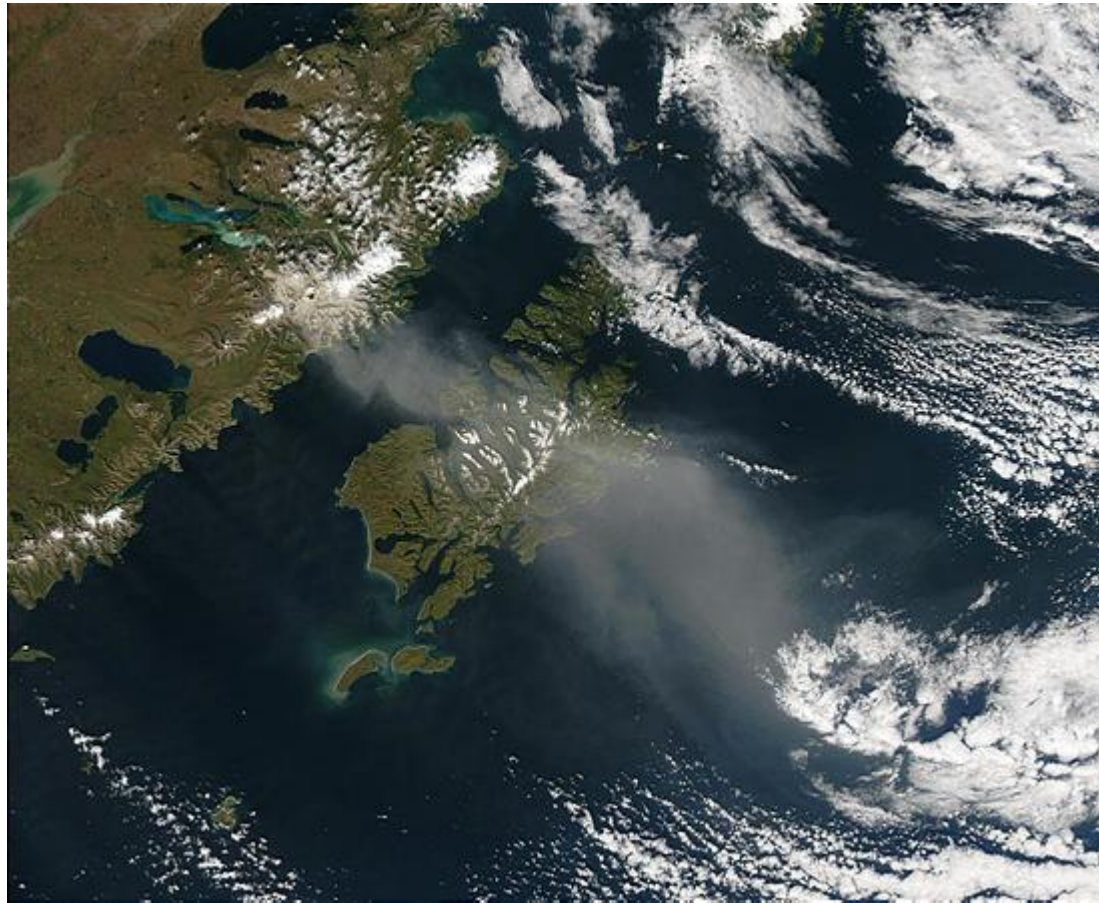


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# Forecasting Re-Suspended Ash Events

# Re-suspended volcanic ash over Kodiak Island, Alaska

(Credit: Jeff Schmaltz, MODIS Rapid Response Team, NASA/GSFC. Image taken September 21, 2003.)



# VAAC Processes for Re-Suspended Ash

- Existing large areas of ash are known to re-suspend in certain conditions. VAACs are able to be alert during these times.
- Reports of re-suspended ash treated the same as any other report of ash.
- A mention of the ash source can be placed in the Eruption Details or RMK sections of the VAA.
- MWO obliged by Annex 3 to use the word “eruption” in the VA SIGMET. Tokyo VAAC addressing this in MOG meeting.
- London VAAC provides daily forecasts of possible re-suspension of ash from Eyjafjallajokull & Grimsvotn to the Iceland MWO.

# Forecasting Re-Suspension Events

- What do we need to know to model this re-suspension?
  - Good knowledge of the ash source area, including terrain
  - Knowledge of how the ash is mobilised under different wind and moisture conditions – require a “threshold friction velocity” at which dust grains are mobilised (function of grain diameter, grain density, surface roughness, soil moisture and vegetation cover).
- If the ash already re-suspended, modelling needs to be based on the areal extent of observed ash, as well as base and height.
- Not all VAACs have this modelling capability.

# Suggestions

- Treat re-suspended ash as any other – if it is “discernible” (or expected to be if no cloud cover), then issue a VAA.
- Use Eruption Details to indicate re-suspension – elaborate in RMK field if necessary.

	<i>Element</i>	<i>Detailed content</i>	<i>Template(s)</i>	<i>Examples</i>
11	Eruption details (M)	Eruption details (including date/time of eruption(s))	ERUPTION DETAILS: <i>Free text up to 64 characters or UNKNOWN</i>	ERUPTION DETAILS: ERUPTION AT 20080923/0000Z FL300 REPORTED

- For known “at risk” ash fields, be aware of meteorological conditions that can mobilize the ash.
- Implement “polygon initialisation” dispersion modelling
- Consider daily dispersion model runs for particularly high risk areas (as for Icelandic volcanoes).