

Philippine volcano threatens world climate

The eruption of Mount Mayon in the Philippines is already sending a plume of gas and ash 14km into the atmosphere. If stronger explosions predicted by volcanologists reach the scale of those from Mount Pinatubo in 1991 – when the eruption reached 30km – it could have global consequences

STRATOSPHERE

Above 15km

Volcanoes and the environment

Ozone depletion

Sulphate and chlorine particles expelled into stratosphere. Reactions with nitrogen break down ozone. **Harmful UV rays reach surface**

UV rays

Solar radiation

Surface cooling

Sulphur dioxide

Sulphate aerosol and particle haze reflects solar radiation, shading earth. **Temperature at surface falls**

TROPOSPHERE

Particles may remain in stratosphere for years. Below 15km, weather causes particles to fall within weeks

Ash: Mineral fragments under 2mm across. Cloud can travel hundreds of kilometres. **Ash fall suffocates animals and plants, chokes rivers and lakes**

Acid rain: Gases combine with water in atmosphere to form sulphuric acid. **Precipitation kills plants**

Carbon dioxide Heavier than air, it can collect in valleys where concentration becomes lethal

Magma – dissolved gases released during eruption