New USGS California Volcano Observatory partners with California Emergency Management Agency for hazard identification, risk assessment, and preparedness

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The USGS California Volcano Observatory (CalVO) was established in February 2012 to improve coordination with federal, state, and local emergency managers during volcanic crises, and create new opportunities for volcanic hazard awareness and preparedness. CalVO is an outgrowth of the former USGS Long Valley Observatory but with the broader responsibility of monitoring *all* potentially threatening volcanoes in California, most notably Mount Shasta, Medicine Lake, Clear Lake Volcanic Field, and Lassen Volcanic Center in the north, Long Valley Caldera and Mono-Inyo Craters in east-central California, and Salton Buttes, Coso Volcanic Field, and Ubehebe Craters in the southern part of the state.

California is geologically diverse, exhibiting a range of volcanism resulting from subduction, crustal thinning, and extensional rifting in the northern, central, and southern parts of the State, respectively. More than ten eruptions have occurred in the last 1,000 years, most recently at Lassen Volcanic Center (1666 C.E. and 1914-1917 C.E.) and Mono-Inyo Craters (c. 1700 C.E.). The Long Valley Caldera and Mono-Inyo Craters region underwent several episodes of heightened unrest over the last three decades, including intense swarms of volcano-tectonic earthquakes, rapid ground uplift, and dangerous CO_2 emissions. Both Medicine Lake and Lassen are subsiding at the appreciable rate of 8-10 mm per year, and along with Clear Lake, sporadically experience long-period, low frequency earthquakes related to migration of magma or hydrothermal fluid. With the exception of Ubehebe Craters, all California "watch list" volcanoes support vigorous hot springs, boiling mudpots and (or) fumarolic activity, and four are geothermal power producers.

In addition to monitoring, a major component of the field-based research conducted by observatory volcanologists funnels into the creation of comprehensive and authoritative volcanic hazard assessments. Each assessment is a dynamic document, refined and updated as new data are collected and interpretations become better constrained. To maximize the societal impact of USGS volcano hazard assessments, CalVO is partnering with the California Emergency Management Agency (CalEMA), the government entity responsible for coordinating disaster preparedness, response, and recovery efforts within the state. The USGS-CalEMA partnership will result in a three-part volcano annex to the California Statewide Emergency Plan that includes hazard identification, risk analysis, and an emergency operations plan. The volcano annex will integrate natural hazard and socio-economic information in a format readily accessible to decision-makers.