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The Ilopango caldera: Volcanic danger posed by a long-lived caldera system in Central America

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Ilopango caldera is located at El Salvador, within the Central American Volcanic Arc. It is rectangular, 11 by 17 km, and contains the Ilopango Lake. Caldera's magmatism is related to subduction between the Cocos and Caribbean plates. Last activity at Ilopango was the formation of an intra-lake lava dome at 1880, mostly subaquatic, with the tip emerging as two small rock-islands. The caldera is considered still active, posing a volcanic danger to the densely populated area around the lake, in particular to the capital city San Salvador, lying next to the caldera. Our study shows that the caldera had several large eruptions mainly in the form of pyroclastic density currents with some fallouts. Voluminous pyroclastic activity started at about 1.5 Ma and continued until about 1.5 ka. New stratigraphic work and ages, including ^{40}Ar - ^{39}Ar , and U-Pb and U-Th on zircon and apatite, show a long-lived magmatic system that have produced episodically several PDCs of relatively large volume. This caldera system has been active since 1.5 Ma to Present time. By obtaining new and more precise ages of these products we will be able to establish a recurrence time between major eruptions, which will be useful for future volcanic danger estimations and numerical modeling of eruption parameters. Supported by CONACYT-CB grant 240447.