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A proposal to add names at Newberry Volcano

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Newberry Volcano is one of the most hazardous volcanoes in the continental United States. Its lavas cover about 1200 square miles and underlie populated areas including Sunriver and downtown Bend OR. The lava flow that underlies nearly all of Bend east of the Deschutes River and formed Lava River Cave erupted from vents midway up the north flank of the volcano and reached the south edge of Redmond, some 30 miles away. Another of several such flows traveled even farther and reached Smith Rock, temporarily filling the Crooked River channel. On the main edifice of Newberry, there are as many as 400 cinder cones that represent >300 eruptions during the half-million-year history of the volcano. Most of these involve cinder cone(s) and lava flows that traveled a few miles to a dozen miles. A fissure eruption 7,000 years ago extended 20 miles across the volcano creating Lava Butte, Lava Cast Forest, and blocking the Deschutes River. Several explosive caldera collapse eruptions have occurred, accompanied by pyroclastic flows and by ash falls, some of which reached the Bay Area.

In an effort to understand the history of the volcano and evaluate its potential hazards, the USGS has had a long-term project at Newberry to decipher how it has behaved through time. In addition to geologic mapping, USGS scientists do argon dating of lava flows, assess episodic behavior via paleomagnetism, study the volcanic ash deposits, and sample drill cores. The goal is to understand how the volcano is likely to behave if it should become restless. The geologic map incorporates much of this information and is the fundamental document that tells the story of the volcano. It will form the basis of a new volcano hazards assessment.

A geologic map includes names for the various mapped units (e.g., “the basalt of Klone Butte”) representing individual eruptions, in order to provide spatial context for the user of the map. However, Newberry is the land of many cinder cones and other features and few names. Some lava flows have multiple names, while some areas where there are many lava flows have almost no names. In an effort to add names in critical areas, the proposal for the September OGNB meeting focuses on 25 locations, 19 of which are cinder cones that fed lava flows that typically traveled many miles from source. The names are based on shape, animal or tree name, history, or the process by which the feature was created. Each name in the spreadsheet has an explanation and description of the feature. The 19 cones are only a small number of the many (>100) unnamed cinder cones on the volcano. Having names at the identified locations will provide significant benefit to telling the story of the volcano through its 500,000-year history of eruption, erosion, caldera collapses, and glaciation.

Caption for location map: Proposed names are shown with locations indicated by red crosses. Black dots show existing names. Green outline is for Newberry National Volcanic Monument. Black line gives approximate limit of Newberry Volcano lavas which extend to the north beyond the edge of the map.