



## POTENTIAL VOLCANIC HAZARDS FROM FUTURE ACTIVITY OF MOUNT BAKER, WASHINGTON

by  
Cynthia A. Gardner, Kevin M. Scott, C. Dan Miller, Bobbie Myers,  
Wes Hildreth, and Patrick T. Pringle

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### Explanation of Flowage Hazard Zones

 Inundation zone for Case 2 debris flows: Area that could be affected by cohesive debris flows related to the disaggregation of moderate to small debris avalanches from Sherman Crater or upper Avalanche Gorge (Rainbow Creek). Recurrence interval for flows from either source is 100 years or less (more frequent). This case represents a debris flow analog of the 100-year flood.

 Pyroclastic flowage hazard zone: Area that could be affected by pyroclastic flows, pyroclastic surges, lava flows, and ballistic debris from future eruptions. During any given event, some parts of the zone may be completely unaffected by these processes, whereas other areas may be adversely affected.

 Town boundaries: Town boundaries shown are not official corporate boundaries but are drawn by the authors around areas of de-facto urban-suburban areas as indicated by the highest concentrations of roads depicted on USGS 1:100,000 quadrangles of late-1980's vintage.

 Water body

 Stream

 Inundation zone for Case M debris flows: Area that could be affected by cohesive debris flows that originate as large debris avalanches of hydrothermally altered rock from the volcanic edifice. Case M flows could occur with or without eruptive activity. Only one Case M event has occurred at Mount Baker in the past 14,000 years, this is the large debris flow in the Middle Fork of the Nooksack River identified by Hyde and Crandell (1978). Deposits from this debris flow can be mapped as far downstream as the community of Deming, but presumably this flow continued to Puget Sound. This designation is also given to two scenarios of potentially catastrophic events. One is a debris flow of sufficient size to overtop the divide between the Nooksack and Sumas Rivers and sending a flow down the Sumas River. The other is a debris flow or flood that moves down the Skagit River valley as the result of a volcanic event that causes the failure, or a wave overtopping Baker Dam.

 Inundation zone for Case 1 debris flows: Area that could be affected by noncohesive debris flows related to melting of snow and ice by the interaction with hot material either during periods of magmatic or nonmagmatic activity (steam explosions, hydrothermal activity, etc.). Recurrence interval in excess of 500 years. The possibility of an event will increase if precursory volcanic activity is detected. Case 1 flows are not shown on the east side of the volcano as potential inundation levels are the same as for Case 2 flows.



Scale in Miles



Scale in Kilometers

Contour Interval 100 meters