Mount St. Helens—A Bibliography of Geoscience Literature 1882-1986

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Mount St. Helens—A bibliography of geoscience literature, 1882-1986

by

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INTRODUCTION

On May 18, 1980, Mount St. Helens in southwestern Washington erupted, producing a forest-leveling blast, a giant plume, widely distributed ashfalls, extensive lahars, flooding, and considerable property damage, and causing a tragic loss of life. This was the first major volcanic eruption in the conterminous United States since the Lassen Peak eruption of 1915.

Mount St. Helens' last major eruptive period was in the mid-nineteenth century, but the eruption of May 1980 did not come as a surprise. In a 1978 report, USGS scientists termed the possibility of a future eruption a "near certainty" (Crandell and Mullineaux, 1978, p. 22). In March 1980 scientists detected increased seismic activity followed by releases of ash and by other changes in the volcano, which culminated in the explosive eruption of May 18th. The location of Mount St. Helens in a fairly accessible area provided an unusual opportunity for physical, life, and social scientists to study at close range this catastrophic eruption and its widespread effects.

Scientists had studied Mount St. Helens and its environs before the May 1980 eruption; this bibliography includes about 100 works published between 1882 and 1979. More than 1,500 reports, maps, books, and articles on Mount St. Helens were published in the 6 years following the 1980 eruption, making this one of the most heavily studied geologic events in history.

The libraries of the U.S. Geological Survey in Reston, Virginia, and the Washington Division of Geology and Earth Resources in Olympia, Washington, recognized the need to bring together this vast amount of material and undertook a cooperative project to compile this bibliography and index of the literature on Mount St. Helens from historical times to the present.

SCOPE

Our primary intention was to collect the research done on the eruption-related geology and hydrology of Mount St. Helens through 1986. We focused on Washington State but expanded geographically to provide adequate coverage of ashfall and meteorological, acoustical, climatic, and other far-ranging effects. Quaternary eruptions of Mount St. Helens produced widely-dispersed ash, commonly used as stratigraphic markers. Some of these studies have been listed, particularly when applicable to Washington State, but no attempt was made to reference all such reports.

In addition, we have included many overviews and summary treatments, which can be found under the headings "General Works" and "Chronology and History of the 1980 Eruption." We have also selected examples of the types of research being done in related disciplines such as biology, forestry, medicine, and the various social sciences, to illustrate the broader consequences of a geologic hazard.

The bibliography consists mainly of references to monographs, maps, journal articles, conference papers, abstracts, theses, and open-file reports. Purposely excluded were newspaper and news-magazine accounts, audiovisual materials, and ephemera.

The bibliography was compiled from the collections and files of the two libraries. Additional references were gathered from database searches on GeoRef, Geoarchive, Water Resources Abstracts, National Technical Information Service, Dissertation Abstracts Online, and Meteorological and Geoastrophysical Abstracts. All items in the bibliography have been examined by the compilers.

ORGANIZATION

1. BIBLIOGRAPHY: Each citation is given in full. Works are listed alphabetically and chronologically by author, with an author's individual works preceding co-authored works. Joint author cross-references are interfiled alphabetically.

2. SUBJECT INDEX: References are grouped alphabetically under headings that provide either subject or geographic access. Only the author(s), date, and title are given, and reference must be made to the Bibliography for the full citation. Appropriate cross-references are provided. Repeated citations, from multiple publications and(or)

abstracts, are given once and marked with an asterisk (*). Particular attention has been given to specific geographic locations in Washington State, including named lakes, streams, cities, and counties.

3. LIST OF INDEX TERMS: All index terms and cross-references used in the Subject Index are listed alphabetically. Scanning this list should be helpful in suggesting subject approaches.

BIBLIOGRAPHIES

In addition to this bibliography, the user might wish to consult the following previously published bibliographies on Mount St. Helens:

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