Publications of the Washington Geological Survey

May 2019
The Survey now has a blog, called the Washington State Geology News, where we share current events within the Survey, preliminary research findings, exciting geology photography, and recent publication announcements. Once there you can subscribe to receive new blog posts automatically. [ONLINE]

The portal allows you to access interactive earth science mapping, data, and related information. Using our interactive maps, you can create, save, and print custom maps, find out more about map features, and download map data for use in a geographic information system (GIS). In addition to a variety of geoscience layers that can be turned on and off, each interactive map has many base layers to choose from, so you can customize your map in any number of ways. [ONLINE]

Looking for an obscure geologic report? This searchable database of library holdings will help you find it. The Washington Geology library contains more than 40,000 titles on the geology of Washington State, more than 3000 current and historic topographic and geologic maps, a comprehensive set of dissertations and theses, environmental impact statements and watershed analyses, and the National Tsunami Hazard Mitigation Program library collection. There are links to online publications where available. [ONLINE]

All of our geologic maps are now available through our website on our Publications and Maps page. Scroll down and click on “Geologic Maps”. The maps can also be found on a page-size color map that shows published geologic mapping of 7.5-minute topographic quadrangles in Washington State from all sources. Attached text lists quads alphabetically and by author, with links to online publications. [ONLINE]

A variety of geographic information system (GIS) data is available on our website in ESRI shapefile format, including geologic coverage of the entire state of Washington at scales of 1:24,000, 1:100,000, 1:250,000, and 1:500,000. [ONLINE]

{TsunInfo Alert} is a bi-monthly newsletter that links scientists, emergency responders, and community planners to the latest tsunami research. It is published by WGS for the National Tsunami Hazard Mitigation Program, a state/federal partnership funded through the National Oceanic and Atmospheric Administration. It is made possible by a grant from the Federal Emergency Management Agency via the Washington Military Department Emergency Management Division. [ONLINE]

Coal has been mined in Washington since 1853. Although current production is from surface mines, nearly all coal produced prior to about 1970 came from underground workings. Since early in this century, Washington State law has required mine operators to submit detailed plans of all underground coal operations to the state on an annual basis. About 1,100 individual maps representing about 230 mines have been scanned and are available electronically. [ONLINE]
Publications are listed by series. This document is searchable using the Acrobat search function. Online publications are indicated by a hyperlink [ONLINE] at the end of the publication description. Where possible, larger files have been broken into parts for ease of downloading [PART 1][PART 2]. For unusual cases, we have tried to make the link name descriptive enough to distinguish between files. If you need a hard copy of a large-format report, such as a map, and do not have access to a plotter, your local copy center may be able to print it out. Reports marked “Lib. use only” may be viewed in the Survey library in Olympia. All new Survey reports and maps are announced on our website.

Printed publications

Our publications are no longer for sale as printed documents through the Department of Enterprise Services, but they are available online. If you can’t find what you are looking for in this publications list, search our online library catalog at: http://www.dnr.wa.gov/programs-and-services/geology/washington-geology-library. Printed items are sometimes returned to the Survey and are made available ‘first-come, first-served’. Availability changes often; e-mail stephanie.earls@dnr.wa.gov for current availability.

Contact us

Mailing address
Washington Geological Survey
MS 47007; Olympia, WA 98504-7007
See map for street address
Phone: 360-902-1450; Fax: 360-902-1785
E-mail: geology@dnr.wa.gov (general services)
stephanie.earls@dnr.wa.gov (library services)
URL: www.dnr.wa.gov/geology

Visitors may enter the Natural Resources Building parking lot using the Washington Street entrance. Visitor parking (VP) is on level P1. Follow the signs. There is a fee for parking.

The Survey is across the Rotunda, past the four elevators, on the north side of first floor. See the building directory in the lobby. Sign in at the Information Desk in the Rotunda to get a visitor’s pass.

Staff list
The Survey Staff List has contact information for individual staff.
### Bulletin

The subject matter of a Bulletin is of widespread interest in the geologic community and the subject matter is treated thoroughly and in a well-organized, scholarly manner. Bulletins are usually written for geologic audiences. Bulletins are peer reviewed and edited to Survey/USGS/major journal standards.

### Geologic Map (GM) and Map Series (MS)

Geologic Maps (GMs) and Map Series (MS) publications are geological, geophysical, or derivative maps, with text on the map or in an accompanying pamphlets. The maps are the chief vehicles of communication. They are usually the result of original field investigations or extensive compilation and re-presentation of data in map form. Geologic Maps are peer reviewed and edited to Survey/USGS/major journal standards. Map Series are not peer reviewed, but are still edited to conform to Survey/USGS/major journal standards.

### Report of Investigations (RI)

A Report of Investigations (RI) conveys the results of significant field investigations, usually by a Survey staff geologist. It may contain a map or maps larger than page size, but the report is chiefly text and page-sized figures and tables. It is usually shorter than a Bulletin and narrower in scope and more restricted in geographic coverage. It is still a thorough and often scholarly presentation that conveys important information and is complete and able to stand on its own. RIs are usually written for a geologic audience. They are peer reviewed and edited to Survey/USGS/major journal standards.

### Information Circular (IC)

An Information Circular (IC) is a vehicle for all types of geologic or geology-related information, usually in 8½ x 11 in. format. Original field work may be involved but often is not. Instead, the report is usually a compilation of data or historical records, assembled because the information has geologic significance, is needed by a large number of people, or is otherwise unavailable in convenient form. An IC is sometimes written for a geologic audience, but is more often written to be useful to geologists and understandable to the general public. ICs have been catalogs (earthquake hypocenters, oil and gas exploration wells, mining operations, map indexes, theses), road logs, or reports on particular areas. An IC is edited to Survey/USGS/major journal standards, but is not always peer reviewed.

### Topographic Map (TM)

The only Topographic Maps (TM) issued to date are the 1:250,000 topographic maps prepared by the Survey to serve as base maps for the southwest, northeast, and southeast quadrants of the state geologic map (GM-34, GM-39, and GM-45).

### Digital Data Series (DS)

Digital Data Series (DS) present geologic data in GIS file geodatabase format. The data are available online and intended to be used interactively (that is, the data can be analyzed, displayed, or otherwise manipulated to meet the user’s needs). The datasets may be updated from time to time, will not exist on paper, and are not archived; that is, when the data is updated, no copy of the previous version is kept. For DSs, there are specific hardware/software/expertise requirements. Updates are identified by a version number, typically the date. For some Digital Reports, requesters may be asked to execute a product license agreement. Digital Data Series are usually edited for conformance to Survey digital data standards.

### Digital Report (DR)

Digital Reports (DR) present large data sets in electronic form. The reports are available online and intended to be used interactively (that is, the data can be sorted, subdivided, or otherwise manipulated to meet the user’s needs). The reports may be updated from time to time, may not exist on paper, and are not archived; that is, when the report is updated, no copy of the previous version is kept. For some DRs, there are specific hardware/software/expertise requirements. Updates are identified by a version number, typically the date (for example, DR-1, ver. 8/26/1998). For some Digital Reports, requesters may be asked to execute a product license agreement. Digital Reports are usually not edited or peer reviewed in the usual sense. Instead they are prepared with due care and then modified or corrected as authors and (or) users find problems or errors.

### Open File Report (OFR)

An Open File Report (OFR) is a body of geologic or geology-related information in map and (or) text form that is significant enough to make available to the public, but, for one reason or another, has not been prepared and released as a Bulletin, GM, RI, or IC. These reasons include: (1) the report is preliminary, (2) the report must be released quickly, (3) the report was never intended for publication, perhaps because very few copies will be needed, (4) the report is informal or doesn’t lend itself to one of the formal report series, or (5) people, money, and (or) time are not available to prepare a Bulletin, GM, RI, or IC. OFRs may or may not be peer reviewed and (or) edited to Survey/USGS/major journal standards.

### Field Trip Guide (FTG)

A Field Trip Guide (FTG) is just what it says it is—a field trip guide. FTGs may or may not be peer reviewed and (or) edited to Survey/USGS/major journal standards.
Fourth biennial report of the Division of Mines and Mining for the period commencing October 1, 1940 and ending September 30, 1942, by S. L. Glover. 1943. 9 p. [ONLINE]  
Twelfth biennial report of the Department of Conservation and Development—October 1, 1942–September 30, 1944, by Ed Davis. 1944. 52 p. [ONLINE]  
Fifth biennial report of the Division of Mines and Mining for the period commencing October 1, 1942, and ending September 30, 1944, by S. L. Glover. 1944. 6 p. [ONLINE]  
Biennial report no. 1 of the Division of Mines and Geology for the period commencing October 1, 1944 and ending September 30, 1946, by S. L. Glover. 1946. 24 p. [ONLINE]  
Biennial report no. 2 of the Division of Mines and Geology for the period commencing October 1, 1946 and ending September 30, 1948; including a report on Washington’s mineral industry, by S. L. Glover. 1948. 28 p. [ONLINE]  
Biennial report no. 3 of the Division of Mines and Geology for the period commencing October 1, 1948 and ending September 30, 1950, by S. L. Glover. 1951. 13 p. [ONLINE]  
Biennial report no. 4 of the Division of Mines and Geology for the period commencing October 1, 1950 and ending September 30, 1952, by S. L. Glover. 1952. 8 p. [ONLINE]  
Biennial report no. 7 of the Division of Mines and Geology for the period commencing July 1, 1956 and ending June 30, 1958, by M. T. Huntting. 1958. 19 p. [ONLINE]  
The Washington Division of Geology and Earth Resources—Geology in the public interest. 2003. 4 p. [ONLINE]  
The Washington Division of Geology and Earth Resources—Geology in the public interest. 2005. 4 p. [ONLINE]  
The Washington Division of Geology and Earth Resources—Geology in the public interest [short version]. 2005. 2 p. [ONLINE]  
The Washington Division of Geology and Earth Resources—Geology in the public interest. 2009. 4 p. [ONLINE]
**BULLETS**

Contact us to see if paper copies are available (see p. 3)

**Washington Geological Survey**

1. Geology and ore deposits of Republic mining district, by J. B. Umpleby. 1910. 66 p., 13 pl., 5 figs. [ONLINE]

2. The road materials of Washington, by Henry Landes. 1911. 204 p., 17 pl., 51 figs. [ONLINE]

3. The coal fields of King County, by G. W. Evans. 1912. 247 p., 23 pl., 59 figs. [ONLINE]

4. Cement materials and industry in Washington, by Solon Shedd. 1913. 268 p., 21 pl., 10 figs. [PART 1] [PART 2]

5. Part I. Geology and ore deposits of the Myers Creek mining district; Part II. Geology and ore deposits of the Oroville–Nighthawk mining district, by J. B. Umpleby. 1911. 113 p., 3 pl., 5 figs. [ONLINE]

6. Geology and ore deposits of the Blewett mining district, by C. E. Weaver. 1911. 104 p., 10 pl., 1 fig. [ONLINE]

7. Geology and ore deposits of the Index mining district, by C. E. Weaver. 1912. 96 p., 7 pl. [ONLINE]

8. Glaciation of the Puget Sound region, by J. H. Bretz. 1913. 244 p., 24 pl., 27 figs. [ONLINE]

9. The coal fields of Kittitas County, by E. J. Saunders. 1914. 204 p., 38 pl., 52 figs. [ONLINE]

10. The coal fields of Pierce County, by Joseph Daniels. 1914. 146 p., 30 pl., 23 figs. [ONLINE]

11. The mineral resources of Washington, with statistics for 1912, by Henry Landes. 1914. 53 p., 1 pl. [ONLINE]


13. The Tertiary formations of western Washington, by C. E. Weaver. 1916. 327 p., 30 figs., 3 pl. [PART 1] [PART 2]


16. Geology and ore deposits of the Covada mining district, by C. E. Weaver. 1913. 87 p., 5 pl., 3 figs. [ONLINE]

17. A geographic dictionary of Washington, by Henry Landes. 1917. 346 p., 10 pl. [PART 1] [PART 2]

18. The country about Camp Lewis, by M. M. Leighton. 1918. 105 p., 12 pl., 6 figs. [ONLINE]


20. The mineral resources of Stevens County, by C. E. Weaver. 1920. 350 p., 20 pl., 14 figs. [PART 1] [PART 2]


23. The metal mines of Washington, by E. N. Patty. 1921. 366 p., 36 pl., 27 figs. [PART 1] [PART 2]

24. Clays and shales of Washington, by S. L. Glover. 1941. 368 p., 14 pl., 6 figs. [PART 1] [PART 2]

25. The magnesite deposits of Washington, their occurrence and technology, by G. E. Whitwell and E. N. Patty. 1921. 194 p., 13 pl., 5 figs. [ONLINE]

26. Underground water supply of the region about White Bluffs and Hanford, by O. P. Jenkins. 1922. 41 p., 3 pl., 1 fig. [ONLINE]


30. The mineral resources of Washington, with statistics for 1922, by Solon Shedd, with an article on coal and coke by G. W. Evans. 1924. 224 p., 3 figs. [ONLINE]

31. Lead deposits of Pend Oreille and Stevens Counties, by O. P. Jenkins. 1924. 153 p., 3 pl., 15 figs. [ONLINE]


34. Tungsten resources of Washington, by H. E. Culver and W. A. Broughton. 1945. 89 p., 23 pl., 9 figs. [ONLINE]


**Division of Mines and Geology**


37. Inventory of Washington minerals:
<table>
<thead>
<tr>
<th>Number</th>
<th>Title</th>
<th>Authors</th>
<th>Year</th>
<th>Pages</th>
<th>Figs.</th>
<th>Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>38</td>
<td>The place of steam-electric generating stations in the orderly program of electric power development in the Pacific Northwest, by H. H. Houston. 1950. 117 p., 1 pl., 25 figs.</td>
<td>Out of print</td>
<td>1950</td>
<td>117</td>
<td>25</td>
<td>ONLINE</td>
</tr>
<tr>
<td>40</td>
<td>Geology of the Bead Lake district, Pend Oreille County, Washington, by M. C. Schroeder. 1952. 57 p., 1 pl., 6 figs.</td>
<td>Out of print</td>
<td>1952</td>
<td>57</td>
<td>6</td>
<td>ONLINE</td>
</tr>
<tr>
<td>43</td>
<td>Eocene stratigraphy of the lower Cowlitz River--eastern Willapa Hills area, southwestern Washington, by D. A. Henriksen. 1956. 122 p.</td>
<td>Superseded by the online bibliography</td>
<td>1956</td>
<td>122</td>
<td></td>
<td></td>
</tr>
<tr>
<td>63</td>
<td>Geology and mineral resources of King County, Washington, by W. E. Living Jr. 1971. 200 p., 6 pl., 103 figs.</td>
<td>Out of print</td>
<td>1971</td>
<td>200</td>
<td>103</td>
<td>ONLINE</td>
</tr>
<tr>
<td>65</td>
<td>Distribution of copper and other metals in gully sediments of part of Okanogan County, Washington, by K. F. Fox Jr., and C. D. Rinehart. 1972. 38 p., 4 pl. (pl. 1: 26 x 28 in. color geologic map, scale 1:96,000, with 2 overlays), 10 figs.</td>
<td>In print</td>
<td>1972</td>
<td>38</td>
<td>10</td>
<td>ONLINE</td>
</tr>
</tbody>
</table>
### DIGITAL DATA SERIES

**Digital Data Series are available online only.**

10. Surface geology, 1:24,000—GIS data, by Washington Division of Geology and Earth Resources. 2017. [ONLINE]  
12. Metalic minerals database—GIS data, by Washington Division of Geology and Earth Resources. 2015. [ONLINE]  
13. Nonmetallic (industrial) minerals database—GIS data, by Washington Division of Geology and Earth Resources. 2015. [ONLINE]  
15. Coal database—GIS data, by Washington Division of Geology and Earth Resources. 2015. [ONLINE]  
16. Shear wave database—GIS data, by Washington Division of Geology and Earth Resources. 2016. [ONLINE]  
17. Surface geology, 1:100,000—GIS data, by Washington Division of Geology and Earth Resources. 2016. [ONLINE]  
Digital Data Series are available online only.


Fact Sheets are available online only.

- Geology in the public interest. 2015. 4 p. [ONLINE]
- The Washington Geology Library. 2015. 2 p. [ONLINE]
- Landslide hazards in Washington state. 2015. 2 p. [ONLINE]
- What are landslides and how do they occur? 2015. 2 p. [ONLINE]
- Washington State Geologic Information Portal. 2014. 2 p. [ONLINE]
- Waterfall loop tour on the historic Columbia River Highway [Oregon] [ONLINE]

Geologic Maps are available online only.

- Preliminary geologic map of the Hobart and Maple Valley [7.5-minute] quadrangles, King County, Washington, by J. D. Vine. 1962. 43 x 36 in. color sheet, scale 1:24,000. [ONLINE]
- Preliminary geologic map of the Cumberland [7.5-minute] quadrangle, King County, Washington, by H. D. Gower and A. A. Wanek. 1963. 30 x 41 in. color sheet, scale 1:24,000. [ONLINE]
- Geology of the Simcoe Mountains volcanic area, Washington, by R. A. Sheppard. 1967. 43 x 23 in. sheet, scale 1:125,000. [ONLINE]

Note: Geologic maps may also be found under other categories, such as Open File Reports, Bulletins, and Information Circulars.


Division of Geology and Earth Resources


GM-14. Preliminary surficial geologic map of the Edmonds East and Edmonds West [7.5-minute] quadrangles, Snohomish and King Counties, Washington, by Mackey Smith. 1975. 31 x 24 in. sheet, scale 1:24,000. [ONLINE]


GM-20. Preliminary surficial geologic map of the Mukilteo and Everett [7.5-minute] quadrangles, Snohomish County, Washington, by Mackey Smith. 1976. 35 x 24 in. sheet, scale 1:24,000. [ONLINE]


GM-44. Liquefaction susceptibility for the Sumner 7.5-minute quadrangles, Washington, by J. D. Dragovich and P. T. Pringle, with a section on liquefaction by S. P. Palmer. 1995. 24 x 26 in. color sheet, scale 1:24,000, with 26 p. text. [ONLINE]


GM-57. Geologic map of the Port Townsend South and part of the Port Townsend North 7.5-minute quadrangles, Jefferson County, Washington, by H. W. Schassee and S. L. Slaughter. 2005. 42 x 36 in. color sheet, scale 1:24,000. [ONLINE]


GM-63. Geologic map of the Fox Island 7.5-minute quadrangle, Pierce County, Washington, by R. L. Logan, T. J. Walsh, and K. G. Troost. 2006. 33 x 36 in. color sheet, scale 1:24,000. [ONLINE]

GM-64. Geologic map of the Freemont and northern part of the Hansville 7.5-minute quadrangles, Island County, Washington, by Michael Polenz, H. W. Schasse, and B. B. Petersen. 2006. 46 x 36 in. color sheet, scale 1:24,000. [ONLINE]


GM-67. Geologic map of the Fall City 7.5-minute quadrangle, King County, Washington, by J. D. Dragovich, M. L. Anderson, T. J. Walsh, B. L. Johnson, and T. L. Adams. 2007. 42 x 36 in. color sheet, scale 1:24,000, with 16 p. text. [ONLINE]


GM-73. Geologic map of the North Bend 7.5-minute quadrangle, King County, Washington, with a discussion of major faults, folds, and basins in the map area, by J. D. Dragovich, T. J. Walsh, M. L. Anderson, Renate Hartog, S. A. DuFrane, Jeff Vervoot, S. A. Williams, Recep Cakir, K. D. Stanton, F. E. Wolff, and D. K. Norman. 2009. 38 x 36 in. color sheet, scale 1:24,000, with 39 p. text. [ONLINE]

GM-74. Geologic map of the Meeks Table and western two-thirds of the Nile 7.5-minute quadrangles, Yakima County, Washington, by P. E. Hammond. 2009. 36 x 38 in. color sheet, scale 1:24,000, with 12 p. text. [ONLINE]

GM-75. Geologic map of the Snoqualmie 7.5-minute quadrangle, King County, Washington, by J. D. Dragovich, H. A. Littke, M. L. Anderson, Renate Hartog, G. R. Wessel, S. A. DuFrane, T. J. Walsh, J. H. MacDonald Jr., J. F. Mangano, and Recep Cakir. 2009. Two 42 x 36 in. color sheets, scale 1:24,000. [ONLINE]

GM-76. Geologic map of the Cliffdell and western two-thirds of the Manastash Lake 7.5-minute quadrangles, Yakima and Kittitas Counties, Washington, by P. E. Hammond. 2010. 36 x 48 in. color sheet, scale 1:24,000, with 11 p. text. [ONLINE]

Note: STATEMAP 7.5-minute quadrangles from 2012 through the present have been published under the new Map Series.
### Division of Geology


### Division of Mines and Mining

| 3. | January, 1940, supplement to directory of Washington mines, 1939, compiled by the Division of Mines and Mining. 1940. 3 p. | Out of print |
| 5. | Directory of Washington metallic mining properties, by the Division of Mines and Mining. 1940. 72 p. | Out of print |
| 7. | Directory of Washington metallic mining properties, by Division of Mines and Mining. 1941. 74 p. | Out of print |

### Division of Mines and Geology

| 22. | Introduction to Washington geology and resources, by C. D. Campbell. 1953. 42 p., 5 figs. | Out of print |
| 27. | 1957 directory of Washington mining operations, by V. E. Livingston Jr. 1957. 96 p., 2 figs. | Out of print |
### INFORMATION CIRCULARS

**Contact us to see if paper copies are available (see p. 3)**

<table>
<thead>
<tr>
<th>Number</th>
<th>Title</th>
<th>Status</th>
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<tbody>
<tr>
<td>50.</td>
<td>Division of Geology and Earth Resources</td>
<td>Out of print</td>
</tr>
<tr>
<td>51.</td>
<td>Energy resources of Washington, by Washington Division of Geology and Earth Resources staff; and others. 1974. 158 p. [ONLINE]</td>
<td>Out of print</td>
</tr>
<tr>
<td>54.</td>
<td>A geologic road log over Chinook, White Pass, and Ellensburg to Yakima highways, by N. P. Campbell. 1975. 82 p., figs. [ONLINE]</td>
<td>In print</td>
</tr>
<tr>
<td>58.</td>
<td>Engineering geologic studies, by Washington Division of Geology and Earth Resources staff; and others. 1976. 40 p. [ONLINE]</td>
<td>Out of print</td>
</tr>
<tr>
<td>61.</td>
<td>Annotated guide to sources of information on the geology, minerals, and ground-water resources of the Puget Sound region, Washington, King County section, by W. H. Reichert, with supplemental references by D. D. Dethier. 1978. 63 p., 8 figs. [ONLINE]</td>
<td>In print</td>
</tr>
</tbody>
</table>


118. Geomorphic mapping of the Chehalis River floodplain, Cosmopolis to Pe Ell, Grays Harbor, Thurston, and Lewis Counties, Washington by S. L. Slaughter and I. J. Hubert. 2014. 61 p. [ONLINE]

119. Rock aggregate resource inventory map of Pierce County, Washington by D. W. Eungard and J. L. Czajkowski. 2015. 23 p., 1 pl., scale 1:100,000. [ONLINE]

120. Rock aggregate resource inventory map of Lewis County, Washington by D. W. Eungard. 2015. 25 p., 1 pl., scale 1:100,000. [ONLINE]


2014-02 Geologic map of the Center 7.5-minute quadrangle, Jefferson County, Washington, by M. P. Polenz, H.O. Gordon, J. J. Hubert, T. A. Contreras, A. I. Patton, Gabriel Legorreta Paulin, and Recep Cakir. 2014. 42 x 36 in. color plate, scale 1:24,000, with 35 p. text. [ONLINE]

2014-03 Geologic map of the Quilcene 7.5-minute quadrangle, Jefferson County, Washington, by T. A. Contreras, A. I. Patton, Gabriel Legorreta Paulin, I. J. Hubert, Recep Cakir, and R. J. Carson. 2014. 42 x 36 in. color plate, scale 1:24,000, with 27 p. text. [ONLINE]


2015-02 Geologic map of the Port Ludlow and southern half of the Hansville 7.5-minute quadrangles, Kitsap and Jefferson Counties, Washington, by Michael Polenz, J. G. Favia, I. J. Hubert, Gabriel Legorreta Paulin, and Recep Cakir. 2015. 42 x 36 in. color plate, scale 1:24,000, with 40 p. text. [ONLINE]

2015-03 Geologic map of the Tacoma 1:100,000-scale quadrangle, Washington, by J. E. Schuster, A. A. Cabibbo, J. F. Schilter, and I. J. Hubert. 2015. 42 x 36 in. color plate, scale 1:100,000, with 31 p. text. [ONLINE]

2016-01 Tsunami hazard maps of the San Juan Islands, Washington—Model results from a Cascadia subduction zone earthquake scenario, by T. J. Walsh, Edison Gica, Diego Arcas, V. V. Titov, and D. W. Eungard. 2016. Four 36 x 36 in. map sheets, scale 1:24,000 and 1:48,000, with 9 p. text. [ONLINE]


Washington Geological Survey


2017-03 Geologic map of the Rimrock Lake, Tieton Basin, and western two-thirds of the Weddle Canyon 7.5-minute quadrangles, Yakima County, Washington, by P. E. Hammond. 2017. 48 x 36 in. color plate, scale 1:24,000, with 19 p. text. [ONLINE]
2018-01  Tsunami hazard maps of southwest Washington—Model results from a ~2,500-year Cascadia subduction zone earthquake scenario, by D. W. Eungard, Corina Forson, T. J. Walsh, Edison Gica, and Diego Arcas. 2018. Six 36 x 42 in. map sheets, scale 1:48,000, with 11 p. text. [Revised 2018] [ONLINE]

2018-02  Tsunami hazard maps of the Anacortes–Bellingham area, Washington—Model results from a ~2,500-year Cascadia subduction zone earthquake scenario, by D. W. Eungard, Corina Forson, T. J. Walsh, Edison Gica, and Diego Arcas. 2018. Six 36 x 36 in. map sheets, scale 1:30,000, with 10 p. text. [ONLINE]


Most open-file reports are preliminary and have not been edited or reviewed for conformity with our standards and geologic nomenclature. Those reports marked “Lib. use only” may be inspected in the Division library in Olympia. Those marked “Web only” may be downloaded from the Division website. Where possible, larger files (20MB+) have been broken into parts for ease of downloading [PART 1] [PART 2]. For unusual cases, we have tried to make the link name descriptive enough to distinguish between files. If you need a hard copy of a large format report, such as a map, and do not have access to a plotter, your local copy center may be able to print it out.

### Division of Geology


25-0. Geology and resources of the Pasco and Prosser quadrangles, by Solon Shedd. 1925. 125 p., 1 pl. [PART 1] [PART 2] [PART 3]

### Division of Mines and Geology


69-0. Compilation of geologic mapping in Washington through 1968—A continuation of Leona Boardman’s index to geologic mapping in Washington; also, Geologic maps from theses on Washington geology, by W. H. Reichert. 1969. 43 p., 11 maps, scale 1:1,000,000.


69-2. Analyses of stream sediment samples in Washington for copper, molybdenum, lead, and zinc, by W. S. Moen. 1969. 91 p. (including 15 tables), 39 pl., scale 1:125,000. [PART 1] [PART 2] [PART 3] [PART 4] [PART 5] [PART 6] [PART 7] [PART 8] [PART 9]


### Division of Geology and Earth Resources

73-1. Preliminary report on the geology of southern Snohomish County, by Gerald Capps, J. D. Simmons, and F. D. Videgar. 1973. 12 p., 1 pl. [PART 1] [PART 2] [PART 3] [PART 4] [PART 5] [PART 6] [PART 7]


73-3. Preliminary geologic map of the southern Cascade Range, by P. E. Hammond. 1973. 5 pl., scales 1:24,000, 1:125,000, 1:500,000. [ONLINE]


73-5. East Wenatchee and vicinity geologic hazard maps, by E. R. Artim. 1973. 9 sheets, scale 1:24,000 [nonreproducible]. [PART 1] [PART 2] [PART 3] [PART 4] [PART 5] [PART 6]


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74-7. Geologic interpretive map showing areas of unstable slopes, Kitsap County, Washington, by K. L. Othberg. 1975. 5 p., 12 pl., 1 fig., explanation, scale 1:24,000. [PART 1] [PART 2] [PART 3] [PART 4]


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77-8. Geology, relative slope stability, and flood hazards of the Snipes Mountain area, Yakima County, Washington, by N. P. Campbell. 1977. 3 sheets, scale 1:24,000. [ONLINE]

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79-4. Pierce County, Washington, coal reserves, by E. R. Vonheeder. 1979. 5 sheets, scale 1:130,000, including 6 tables. [ONLINE]


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<td>Preliminary fault map of Washington, by G. B. McLucas. 1980. 5 p., 2 pl., map scales 1:1,000,000 and 1:500,000. [ONLINE]</td>
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83-17. Map of coal mine workings in part of King County, Washington, by T. J. Walsh. 1983. 1 pl., scale 1:24,000, 4-p. explanation. [ONLINE]


84-3. Geology and coal resources of central King County, Washington, by T. J. Walsh. 1984. 24 p., 3 pl. [ONLINE]


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87-12. Bibliography and index of mineral resources of the U.S. Exclusive Economic Zone west of the Washington State coastline, compiled by V. J. Taken. 1987. 151 p., 1 pl., scale 1:2,000,000. [ONLINE]


87-17. Geology of the Twisp River–Chelan divide region, North Cascades, Washington, by R. B. Miller. 1987. 12 p., 12 pl., scales 1:100,000 (pl. 1); 1:24,000 (pl. 2-11); cross sections, pl. 12. [PART 1] [PART 2] [PART 3] [PART 4]


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90-1. Geologic map of the Moses Lake 1:100,000 quadrangle, Washington, compiled by C. W. Gulick. 1990. 9 p., 1 pl., scale 1:100,000. [ONLINE]

90-2. Geologic map of the Ritzville 1:100,000 quadrangle, Washington, compiled by C. W. Gulick. 1990. 7 p., 1 pl., scale 1:100,000. [ONLINE]


90-9. Geologic map of the east half of the Twisp 1:100,000 quadrangle, Washington, compiled by B. B. Bunning. 1990. 52 p., 1 pl., scale 1:100,000. [ONLINE]


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| 94-17. | Landslide map and inventory, Tilton River–Mineral Creek area, Lewis County, Washington by J. D. Dragovich and M. J. Brumengo. 1995. 165 p., 3 pl., scale 1:36,000. [TEXT] [PLATES] | Web only |


2002-1. Tsunami inundation map of the Port Angeles, Washington, area, by T. J. Walsh, E. P. Myers III, and A. M. Baptista. 2002. 48 x 36 in. color sheet, scale 1:24,000. [ONLINE]


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2010-4 Geologic map of the Lilliwaup 7.5-minute quadrangle, Mason County, Washington, by T. A. Contreras, Gabriel Legorreta Paulin, J. L. Czajkowski, Michael Polenz, R. L. Logan, R. J. Carson, S. A. Mahan, T. J. Walsh, C. N. Johnson, and R. H. Skov. 2010. 27.5 x 36 in. color sheet, scale 1:24,000, with 13 p. text. [ONLINE]


2010-6 Supplement to GM-76, Geologic map of the Cliftonell and western two-thirds of the Manastash Lake 7.5-minute quadrangles, Yakima and Kittitas Counties, Washington, by P. E. Hammond. 2010. 1 Microsoft Excel file. [ONLINE]


2013-01 Passive seismic analyses in the Sultan 7.5-Minute quadrangle, King and Snohomish Counties, Washington, by Koichi Hayashi, Recep Cakir, J. D. Dragovich, B. A. Stoker, T. J. Walsh, and H. A. Littke. 2013. 9 p. [ONLINE]

2013-02 Geothermal favorability model of Washington State, by D. E. Boschnm, J. L. Czajkowski, and J. D. Bowman. 2014. 20 p. with 48 x 36 in. color plate, scale 1:900,000. [ONLINE]

2013-03 Tsunami hazard map of Everett, Washington: Model results for magnitude 7.3 and 6.7 Seattle fault earthquakes, by T. J. Walsh, Diego Arcas, V. V. Titov, and C. C. Chamberlin 2014. 50 x 36 in. color sheet, scale 1:32,000. [ONLINE]


2013-05 Faults and earthquakes in Washington State, by J. L. Czajkowski and J. D. Bowman. 2014. 36 x 45 color sheet, scale 1:750,000. [ONLINE]


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<td>Oil and gas possibilities of western Whatcom County, by S. L. Glover.</td>
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<td>Inventory of mineral properties in Snohomish County, Washington, by W. A. Broughton.</td>
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32. Liquefaction features from a subduction zone earthquake—Preserved examples from the 1964 Alaska earthquake, by T. J. Walsh, R. A. Combellick, and G. L. Black. 1995. 80 p., 75 figs., 3 tables. [ONLINE]


34. Digital landslide inventory for the Cowlitz County urban corridor—Kelso to Woodland (Coweeman River to Lewis River), Cowlitz County, Washington, by K. W. Wegmann. 2003. Consists of a GIS inventory of landslides as ArcView shapefiles, a Microsoft Access database, a Microsoft Excel spreadsheet version of the database, digital photographs of individual landslides, associated metadata, 1:24,000-scale landslide inventory maps for 7.5-minute quadrangles in the inventory area, and 20 p. text. 1 CD-ROM. Superseded by Report of Investigations 35.


41. Landslide inventory of western King County, by K. A. Mickelson, K. E. Jacobacci, T. A. Contreras, W. N. Gallin, and S. L. Slaughter. 2019. 7 p. text and 1 ESRI geodatabase. [ONLINE]


5. What are the prospects in Washington State?, by F. H. Wurden; and Puget Sound area has several prospective oil and gas basins, by J. Q. Anderson. 1959. 10 p. [ONLINE]


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TM-3. Topographic map, State of Washington—Southeast quadrant, prepared by Division of Geology and Earth Resources staff. 1997. 1 sheet, scale 1:250,000. [Available rolled (R) or folded (F).] [ONLINE]


Shallow seismic site characterizations at 25 ANSS/PNSN stations and compilation of site-specific data for the entire strongmotion network in Washington and Oregon, by Recep Cakir and T. J. Walsh. 2012. 61 p. [ONLINE]

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Superseed by Bulletin 41.

Oil and gas studies by the Division of Geology, by S. L. Glover. 1936. 8 p. [ONLINE]

Report of natural resources survey from October 1, 1933, to March 1, 1935, by T. B. Hill. 1935. 30 p. [ONLINE]

Colloidal fuel, by M. C. Butler. 1934. 9 p. [ONLINE]

Mining in the Pacific Northwest, by L. K. Hodges. 1897. 183 p. [ONLINE]
The following geologic maps have been processed and converted into 3D models. The listed publisher, series, author, and year are for the original publication.

Airway Heights
WGS Open File Report 2004-1—Derkey and others, 2004

Auburn
USGS GQ 406—Mullineaux and others, 1961

Belfair
WGS Open File Report 2009-7—Polenz and others, 2009

Black Diamond
USGS GQ 407—Mullineaux and others, 1965

Brinnon
WGS Map Series 2012-02—Polenz and others, 2012

Buckley
USGS PP 388A—Crandell and others, 1959

Burley
WGS Open File Report 2009-8—Polenz and others, 2009

Camano
WGS Geologic Map 68—Polenz and others, 2009

Carnation
WGS Open File Report 2010-02—Dragovich and others, 2010

Center
WGS Map Series 2014-02—Hanson and others, 1976

Chattaroy
WGS Geologic Map 55—Hamilton and others, 2005

Cliffdell and Manastash Lake
WGS Geologic Map 76—Hammond and others, 2010

College Place and Walla Walla
WGS Geologic Map 62—Derkey and others, 2006

Coupeville
WGS Geologic Map 58—Polenz and others, 2005

Crescent Harbor
WGS Geologic Map 59—Dragovich and others, 2005

Darrington
WGS Open File Report 2002-7—Dragovich and others, 2002

Deer Island
WGS Geologic Map 54—Evarts and others, 2002

East Olympia
WGS Geologic Map 56—Walsh and others, 2005

Eldon
WGS Map Series 2012-03—Contreras and others, 2012

Elwha and Angeles Point
WGS Open File Report 2004-14—Polenz and others, 2004

Fall City
WGS Geologic Map 67—Dragovich and others, 2007

Fortson
WGS Open File Report 2002-6—Dragovich and others, 2002

Four Lakes
WGS Open File Report 2004-2—Hamilton and others, 2004

Four Mound Prairie
WGS Geologic Map 66—Derkey and others, 2007

Fox Island
WGS Geologic Map 63—Logan and others, 2006

Freeland and Hansville
WGS Geologic Map 64—Polenz and others, 2006

Greenacres

Holly
WGS Open File Report 2011-6—Contreras and others, 2012

Hoodsport
WGS Open File Report 2011-3—Polenz and others, 2012

Juniper Beach
WGS Geologic Map 70—Schasse and others, 2009

Lacey

Lake Chaplain
WGS Map Series 2014-01—Dragovich and others, 2014

Lake Joy
WGS Map Series 2012-01—Dragovich and others, 2012

Lake Wooten
WGS Open File Report 2009-5—O’Neal and others, 2005

Langley
WGS Geologic Map 69—Schasse and others, 2009

Liberty Lake and Newman Lake
WGS Open File Report 2004-12—Derkey and others, 2004

Lilliwaup
WGS Open File Report 2010-4—O’Neal and others, 2005

Lofall
WGS Map Series 2013-03—Contreras and others, 2013

Longbranch

Mason Lake
WGS Open File Report 2009-6—Derkey and others, 2009

Maytown
WGS Geologic Map 72—Logan and others, 2009

McMurray
WGS Geologic Map 61—Dragovich and others, 2006

McNeil Island

Meeks Table and Nile
WGS Geologic Map 74—Hammond and others, 2009

Monroe
WGS Open File Report 2011-1—Capps and others, 1973

Morse Creek
WGS Open File Report 2002-8—Schasse and others, 2002

Mt Higgins

Nine Mile Falls

Nisqually

North Bend
WGS Geologic Map 73—Dragovich and others, 2009
The following geologic maps have been processed and converted into 3D models. The listed publisher, series, author, and year are for the original publication.

Oak Harbor
WGS Geologic Map 59—Dragovich and others, 2005

Olsen Canyon
WGS Geologic Map 71—Derkey and others, 2009

Orting
USGS PP 388A—Crandell and others, 1959

Port Angeles and Ediz Hook
WGS Open File Report 2004-13—Schasse and others, 2004

Port Townsend South
WGS Geologic Map 57—Schasse and others, 2005

Quilcene
WGS Map Series 2014-03—Hanson and others, 1976

Seabeck and Poulsbo
WGS Map Series 2013-02—Polenz and others, 2013

Shelton

Skokomish Valley and Union
WGS Open File Report 2010-03—Polenz and others, 2011

Snoqualmie
WGS Geologic Map 75—Dragovich and others, 2009

Spokane NW
WGS Open File Report 2004-3—Derkey and others, 2004

Spokane SW
WGS Open File Report 2004-4—Hamilton and others, 2004

Squaxin Island

Stimson Hill

Sultan
WGS Map Series 2013-01—Dragovich and others, 2013

Summit Lake
WGS Open File Report 2004-10—Logan and others, 2004

Timberwolf Mtn
WGS Geologic Map 60—Hammond and others, 2005

Tumwater

Utslady and Conway
WGS Open File Report 2002-5—Dragovich and others, 2002

Vaughn
WGS Geologic Map 65—Logan and others, 2007

Wilkeson
USGS PP 388A—Crandell and others, 1959
OTHER PUBLICATIONS

Other publications are available online only.

Color Page-Size Geologic Map of Washington
This 8½ x 14 in. map, compiled by J. E. Schuster, includes a brief description of the geologic history of Washington. Scale 1:2,250,000 (or 1 in. ≈ 37 mi). Revised 2013. [ONLINE]

Mining Districts of Washington
A map (circa 1980?) of the named mining districts. This map is not definitive—names have changed over the years. [ONLINE]

Mount St. Helens Slide Sets
Two sets of slides of the eruptions and short descriptions of the scenes are available:
Set 1 contains 20 slides and covers the period from March through June 1980. This slide set was digitally remastered in 2015. [ONLINE]
Set 2 contains 20 slides and covers the period from May 18, 1980, to May 13, 1981. This slide set was digitally remastered in 2015. [ONLINE]
Set 3 contains 16 digitally remastered photographs and slides of the eruption and its aftermath. [ONLINE]

DGER News
DGER News was an electronic-only newsletter about the activities of the Survey. It was published quarterly from 2003 to 2007 and is available in PDF format. [ONLINE]

Washington Geology Journal
Washington Geology was published about four times a year from 1973 to 2002. It is currently on hiatus. All issues are available in PDF format. Articles cover topics of interest to both geologists and the general public. [ONLINE]

GEOLOGY RECREATION AND EDUCATION

Fossil and Mineral Collecting

Geology Resources for Teachers
Selected information about earth science for teachers, including online sources. [ONLINE]

Gold Panning
Information on recreational placer gold mining and mining claims procedures (both state and federal), includes Mining Claims and Sites on Federal Lands, Small Scale Prospecting and Placer Mining in Washington, Boundaries of State-owned Aquatic Lands, Recreational Gold Panning, and the “Gold & Fish” brochure.

REGULATORY INFORMATION

Rules, Regulations and Forms – Surface Mining Reclamation and Oil and Gas Conservation Acts and accompanying rules, regulations, fees, and forms. [ONLINE]

SCENARIO EARTHQUAKES FOR WASHINGTON STATE
Emergency management experts have created a series of reports on seismic zones at risk of a major earthquake in Washington State. These reports discuss the most likely size and type of earthquake and the amount and location of damage expected. The most up-to-date version of these data can be found in our Geologic Hazard Maps page on our website. Reports are available for the following:

- Boulder Creek in Whatcom County (M6.8)
- Canyon River–Saddle Mountain in Mason County (M7.4)
- Cascadia (M9.0)
- Cascadia North (M8.3)
- Chelan (M7.2)
- Cle Elum (M6.8)
- Darrington–Devils Mountain (M7.1)
- Darrington–Devils Mountain West (M7.4)
- Hite in Walla Walla County (M6.8)
- Lake Creek–Boundary Creek in Clallam County (M6.8)
- Mill Creek in Yakima County (M7.1)
- Nisqually (M7.2)
- Olympia (M5.7)
- Saddle Mountain in south-central Washington (M7.4)
- SeaTac (M7.2)
- Seattle (M7.2)
- Latah in Spokane County (M5.5)
- Mount St. Helens (M7.0)
- southern Whidbey Island (M7.4)
- Tacoma (M7.1)

TOPOGRAPHIC INDEXES FOR WASHINGTON STATE
We have scanned our collection of U.S. Geological Survey topographic quadrangle indexes and catalogs for Washington State. Some quadrangle names have changed over the years. These indexes provide a historical record of the evolution of topographic mapping in Washington State. [1996] [1987] [1983] [1982] [1980] [1976] [1974] [1973] [1965] [1960] [1959] [1958] [1957] [1956] [1955] [1953] [1941] [1933] [1914] [1903]

Washington State Historic Topographic Maps—Inventory held by the Washington Geology Library. This is a list of topographic maps by the USGS and Army Map Service at scales of 1:24,000, 1:25,000, 1:62,500, and 1:125,000. The maps themselves are not online, but the inventory will tell you what we have on hand before you make the trip to Olympia. [ONLINE]

You may be able to find scans of historic topographic maps at the USGS Historical Topographic Map Collection at http://nationalmap.gov/historical/.

For more information on the topographic mapping of Washington State, see the article in Washington Geology [v. 20, no. 1, p. 41].