U.S. Department of the Interior
U.S. Geological Survey

Prepared in cooperation with the
Oregon Department of Geology and Mineral Industries and Washington Geological Survey

Scientific Investigations Map 3443
Sheet 1 (north) of 2
Pamphlet accompanies map

Geologic Map of the Greater Portland Metropolitan Area and Surrounding Region, Oregon and Washington

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2020

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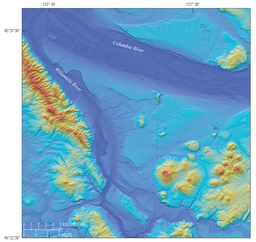


Lidar topographic image of the Portland, Oregon, metropolitan region. The area covered is about 35 km by 35 km; north is at the top. Lowlands are deep blue, about 3 to 4 m elevation, and highlands are orange and red, reaching 400 m elevation. Deep blue channels of the northwest-flowing Willamette River and the west-flowing Columbia River converge at the northwest edge of the image. The Tualatin Mountains, also known as the Portland Hills, along the southwest side of the Willamette River, consist of a faulted anticline of Miocene Columbia River Basalt along the southwest margin of the Portland basin. In the southeast part of the image, Quaternary volcanoes form isolated hills, some with visible craters. The basin fill in the center of the image was formed by the catachysmic late Pleistocene Missoula floods, which flowed westward across the basin, carving channels and depositing giant gravel bars. Image and description are modified slightly from Evarts and others (2009). Source data is from the Oregon Lidar Consortium and Clark County, Washington.

Photograph of downtown Portland looking northwest down the Willamette River. The Ross Island Bridge at the north end of Ross Island is the closest bridge to the camera. The Tualatin Mountains form the forested slopes west of downtown; the prominent break in slope along the eastern foot of the mountains is the approximate location of the Portland Hills fault. Photograph by Charles Simenstad.

Photograph of Scoggins Dam, Henry Hagg Lake, and the Stimson Mill pond with floating log rafts in the foothills of the Coast Range west of Forest Grove, Oregon. View is to the northwest, along the active Scoggins Creek strand of the Gales Creek fault, which follows the valley. Orange fencing on the valley floor in front of mill pond marks the location of a 2017 paleoseismic trench across the fault. Photograph by Ray Wells.

Photograph showing faulted sandstone of the Eocene Cowlitz Formation exposed along the shore of Henry Hagg Lake. North abutment of Scoggins Dam in background. Photograph by Ray Wells.

Base from U.S. Geological Survey 30' x 60' (1:100,000) Nehalem River, 1979; Vancouver, 1979; Yamhill River, 1980; and Oregon City, 1982

Shaded relief calculated from 6-ft-resolution lidar digital elevation models (Oregon Lidar Consortium, Oregon Department of Geology and Mineral Industries; Washington Lidar Portal, Washington Geological Survey) and from 1/3 arc-second digital elevation models derived from 1:24,000-scale contours (The National Map, U.S. Geological Survey)

APPROXIMATE MEAN DECLINATION NEAR CENTER OF MAP, 2020

SCALE 1:63 360

1 INCH EQUALS APPROXIMATELY 1 MILE
1 CM EQUALS APPROXIMATELY 0.6 KILOMETER

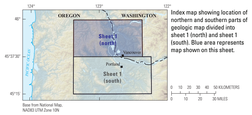
MAP LOCATION

Geology compiled by R.E. Wells, R.A. Haugerud, and K.L. Wheeler, 2014–2018, from published and unpublished sources. See figure 1, pamphlet, and digital database https://doi.org/10.3133/sim3443/ for complete sources.

Database by R.A. Haugerud and R.E. Wells

Edited by J.L. Zyder; digital cartographic production by Katie Sullivan

Manuscript approved for publication September 26, 2019



Index map showing location of northern and southern parts of geologic map divided into sheet 1 (north) and sheet 1 (south). Blue area represents map shown on this sheet.

Base from National Map, NAD83 UTM Zone 10N

Printed on recycled paper
ISSN 2328-0328 (print)
ISSN 2328-1324 (online)
https://doi.org/10.3133/sim3443

Digital files available at https://doi.org/10.3133/sim3443

Suggested citation: Wells, R.E., Haugerud, R.A., Niem, A.R., Niem, W.A., Ma, L., Evarts, R.C., O'Connor, J.E., Madin, I.P., Sherrod, D.R., Beeson, M.H., Tolan, T.L., Wheeler, K.L., Hanson, W.B., and Sawlan, M.G., 2020, Geologic map of the Greater Portland metropolitan area and surrounding region, Oregon and Washington: U.S. Geological Survey Scientific Investigations Map 3443, pamphlet 59 p., 2 sheets, scale 1:63,360, https://doi.org/10.3133/sim3443.