

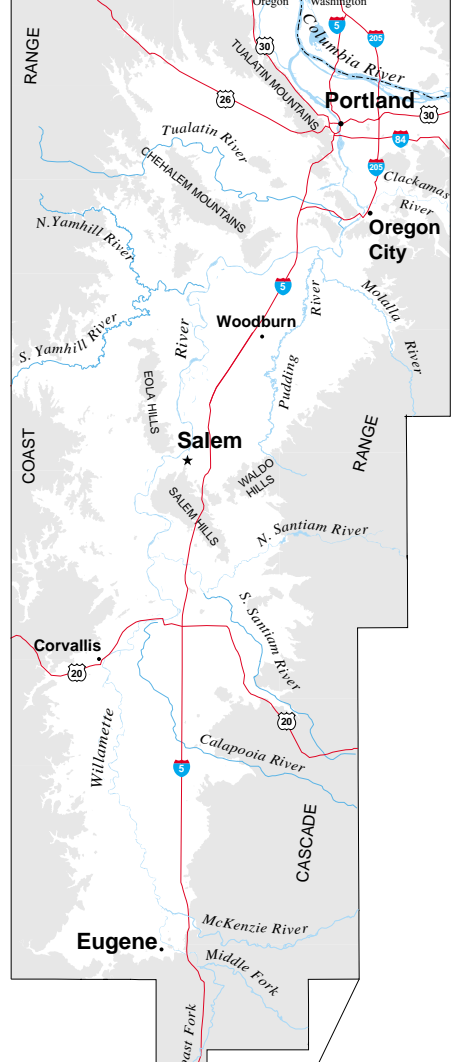
**Creating the map**  
This open file report was generated as a resource for earth and environmental scientists interested in the physiography of the Willamette Valley. Several data sets were used to generate this report, including: 1) Topography - U.S. Geological Survey 10-meter digital elevation models (DEMs); <http://geopubs.wr.usgs.gov/open-file/01-294/> (with reports); 2) Stream coverages for the Willamette, Columbia River, Santiam River, and the Yamhill River - River coverages from The Northwest Aquatic Information Network or Streamnet - <http://www.streamnet.org/>; 3) Transportation Coverage - Standard Data Transfer Files (STDS) from the National Atlas data depot - <http://www.nationalatlas.gov/atlsp/ftp.html>. The data were compiled using the Grid module in ARC/INFO, and colors were assigned to elevation ranges to create the color-shaded relief map. Elevation intervals are smaller in the lowlands to emphasize fluvial and flood features. The hillshade and color grids were combined to produce the color-shaded relief map. A detailed description of the techniques used to create these maps is in the README file of this report. Haugstad and Greenberg (1996) developed many of the above techniques and have created a useful guide to working with DEMs, which is available on the web side web at <http://pubs.usgs.gov/of/01-294/haug2.html>.

Users of these data should be aware that the 10-meter DEM is significantly detailed to show cultural features, particularly the cut and fill along the interstate freeways, State Highways, and major gravel pits. In the Italian Mountains, state highway 26 produces a prominent north-south trending lineation in the topography. In addition to the cultural features, there are three kinds of errors in the data that are visible at publication scale: 1) 100-meter intervals in elevation across 7.5-minute topographic quadrangle boundaries, most obvious in the southwesternmost corner of the Italian Basin; 2) 100-meter patterns around point sources in areas with gentle slopes, most notable in the northern Willamette Valley near Woodburn; and 3) in areas with steep slopes a step pattern can be noticeable, examples are present in stream channels 10-15 miles west of Salem. We did not remove them because a produced unacceptable smoothing of the topographic detail in the original 10-meter DEM. It should be noted that with less vertical exaggeration the artifacts will be less obvious. This Open-File report, including data and maps, is available on-line at <http://geopubs.wr.usgs.gov/open-file/01-294/>.

We thank Ralph Haugstad for many thoughtful discussions about the techniques used to create color-shaded relief maps. Ian Matin and Jan O'Connor provided helpful reviews and Ian suggested a basic color-scheme for the color-shaded relief map.

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Universal Transverse Mercator Projection, zone 10, 3x vertical exaggeration, compiled from 7.5 minute 10-meter DEMs (available on-line with this report)



**Figure 1. Location Map**

SCALE 1:250,000  
KILOMETERS 0 5 10  
MILES 0 5 10

**SHADED-RELIEF MAP OF THE WILLAMETTE VALLEY, OREGON BY R. W. GIVLER AND R. E. WELLS 2001**

This report is preliminary and has not been reviewed for conformity with U.S. Geological Survey editorial standards or with the North American Stratigraphic Code. Any use of trade, firm, or product names in this publication is for descriptive purposes only and does not imply endorsement by the U.S. Government.  
This map was printed on an electronic plotter directly from digital files. Dimensional calibration may vary between electronic plotters and between X and Y directions on the same plotter, and paper may change size due to atmospheric conditions. Therefore, scale and proportions may not be true on plots of this map.  
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