

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://pubs.usgs.gov/open-file/of01-294/>; 2) Stream coverages for the Willamette, Columbia River, Santiam River, and the Yamhill River - River coverages from The Northwest Aquatic Information Network on Streams - <http://www.onstream.org/>; 3) Transportation Coverages, Standard Data Transfer files (STDTN) from the National data data files. <http://www.nationaldata.gov/infact/fg.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 flood and flood features. The hillshades 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. Hagerstrand and Greenberg (1998) developed many of the above techniques and have created a useful guide to working with DEMs, which is available on the web wide with <http://pubs.usgs.gov/open-file/of01-294/hag2.html>.

Users of these data should be aware that the 10-meter DEM is sufficiently detailed to show cultural features, particularly the cut and fill along the interstate freeways, State Highways, and major gravel pits. In the Tualatin Mountains, state highway 26 produces a prominent northwest-trending linear depression. In addition to the cultural features, there are three kinds of errors in the data that are visible at publication scale: 1) one mismatch in elevation across 7.5-minute topographic quadrangle boundaries, most obvious in the northwestern-most corner of the Tualatin Basin; 2) star-shaped 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 it 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://pubs.usgs.gov/open-file/of01-294/>.

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Universal Transverse Mercator Projection, zone 10, 2x vertical exaggeration compiled from 7.5 minute 10-meter DEMs (available on-line with this report)

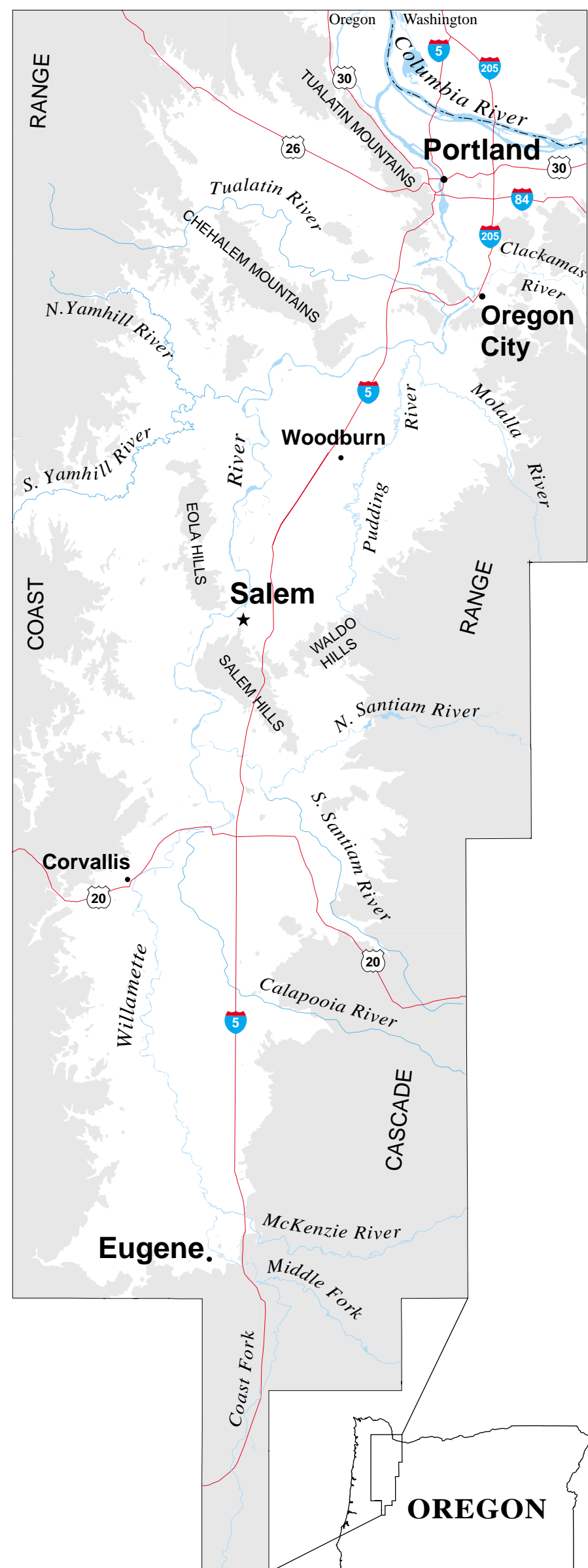
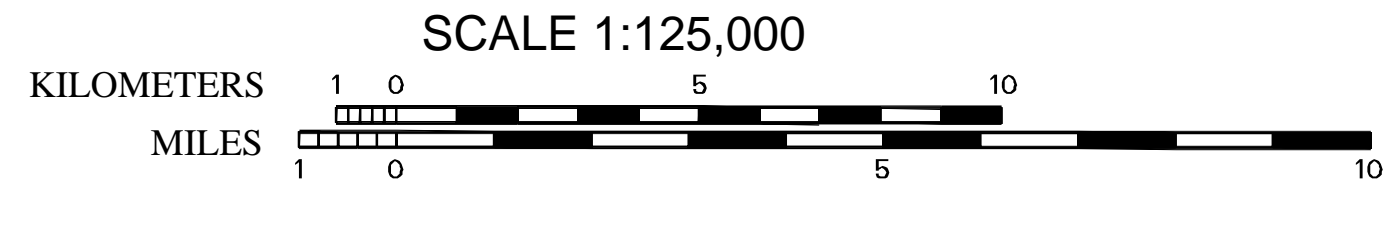


Figure 1. Location Map



SHADED-RELIEF MAP OF THE WILLAMETTE VALLEY, OREGON
BY
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