WASHINGTON STATE DEPARTMENT OF
Natural Resources
Doug Sutherland - Commissioner of Public Lands

DGER NEWS

DIVISION OF GEOLOGY AND EARTH RESOURCES
"Washington State's Geological Survey since 1890"

Website: http://www.dnr.wa.gov/geology/ Vol. 4, No. 4, Winter 2007

WASHINGTON STATE GEOLOGIC INFORMATION PORTAL

The Washington State Geologic Information Portal (Fig. 1) provides geologic maps, data, and related information through the Internet using interactive geographic information system (GIS) technology. Through this online service offered by DGER, you can create a custom map using the Map Contents window and the zoom and pan tools, and find out more information about map features using the Identify tool.

This new service will be useful to those who want an overview of Washington State geology, for example, land-use planners and civil engineers. The level of detail is not sufficient to provide site-specific information, such as determining the landslide hazard for a particular lot.

Currently available on the portal:

- Geologic map information at 1:500,000 scale for the entire state
- Geologic map information at 1:250,000 scale for the entire state
- Several types of base information in a vector format (such as county boundaries, roads, rivers, and township/range) that can be turned off and on
- A base map composed of U.S. Geological Survey 1:100,000-scale topographic quadrangles
- Shaded relief

The user shouldn't expect the product to look like a printed geologic map; for example, there is no ornamentation on the faults and folds. All vector data can, however, be queried for more information, such as road names, geologic unit labels, and fault, fold, and contact types.

Coming Soon

Efforts are underway to prepare more data layers for the portal, including:

- Geologic map information at 1:100,000 scale for the entire state
- Liquefaction susceptibility mapping
- Site class mapping
- Seismic design category mapping

Many more types of geologic information will be added to the portal in the future, so please visit regularly to see what's new. To access the portal, see http://www.dnr.wa.gov/geology/portal/. ■

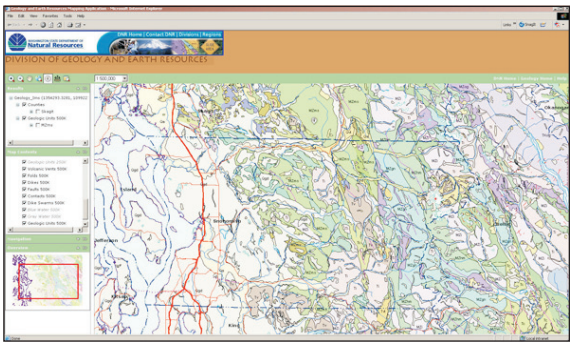

Figure 1. View of the Washington State Geologic Information Portal.

A MESSAGE FROM THE STATE GEOLOGIST

Ron Teissere
State Geologist

The Division of Geology and Earth Resources is now almost through the first six months of the 07–09 Biennium. The projects funded for this biennium are well underway, and we are preparing for the 2008 Legislative Session.

The Department of Natural Resources has agreed to request some further changes to Chapter 43.92 of the Revised Code of Washington (RCW). This chapter is the enabling statute for the Washington Geological Survey. As many of you know, this was last amended in 2006 when the section on geological hazards was added. The requested changes focus on earth science data, electronic data systems, and modernization of our approach to the sharing and dissemination of earth science information. The goal is to focus the survey's attention on not only the data generated by its own work, but also the acquisition, cataloging, archiving, and long-term availability of earth science data from Washington. Data is treated broadly to include items like physical samples and paper records, electronic records, geographical information system data, and scanned documents. As resources permit, our intention is to add these data to a statewide, publicly available geodatabase that can be accessed over the Internet.

Much discussion has been going on in both government and industry circles about the status of aggregate resources in Washington. The issue is not a lack of materials in the state, but whether the right materials will be available at a reasonable price to support the demands for transportation and similar infrastructure as our population continues to grow.

From a statewide perspective, there are insufficient permitted supplies that meet appropriate specifications and are within the Mineral Resource Overlay classification under the Growth Management Act. The Division is engaged in on-going discussions regarding solutions to this concern.

The Division is likely to be engaged in two other issues during the 2008 Legislative session. We expect climate change to be a significant topic for the session. We are already engaged in the effort to sequester carbon dioxide in geological formations in Washington. The other topic will be gravel mining, especially in reference to areas like Maury Island. We expect to be asked to contribute our resource expertise to the discussion. ■

WASHINGTON STATE DEPARTMENT OF Natural Resources
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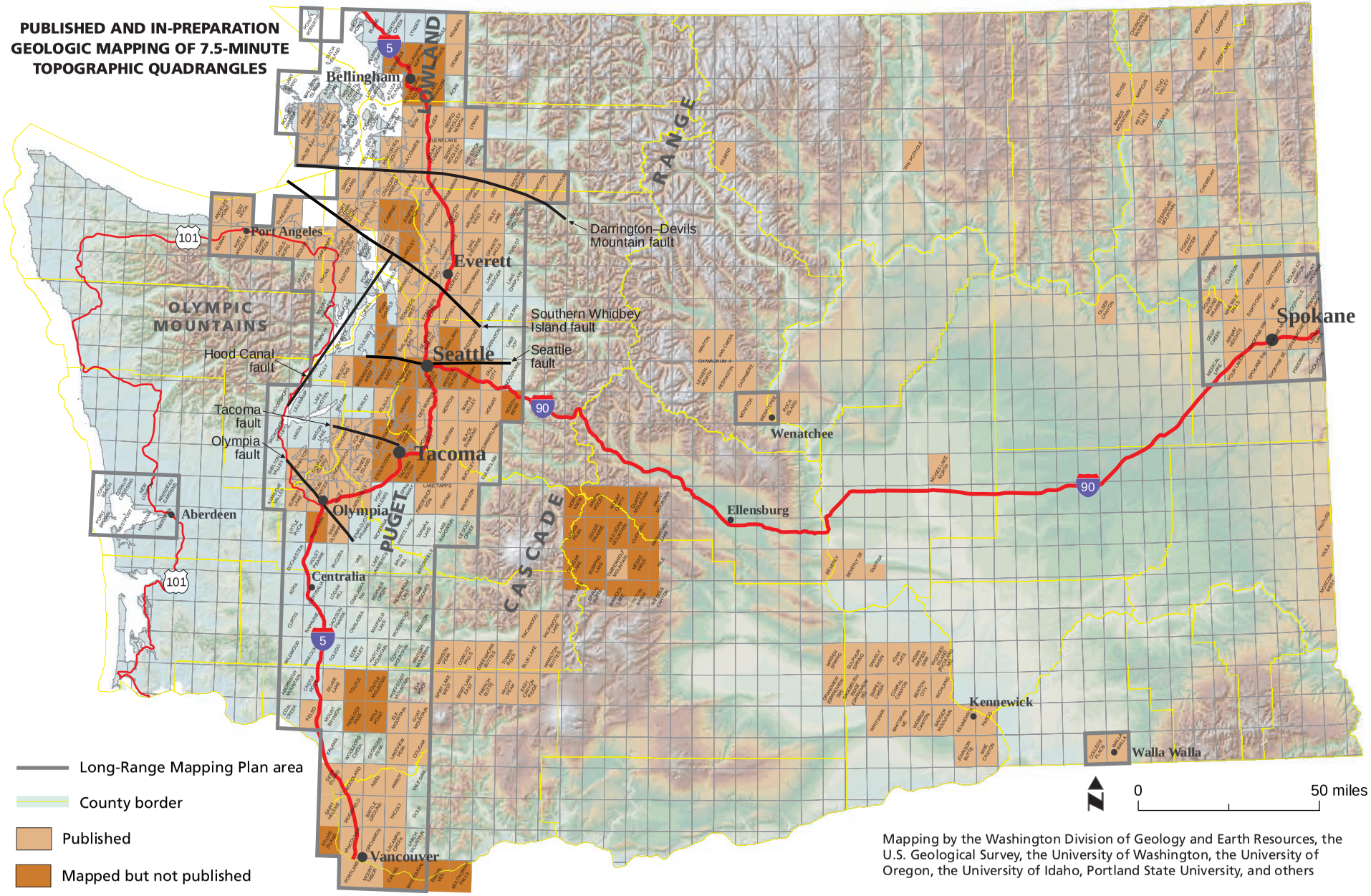
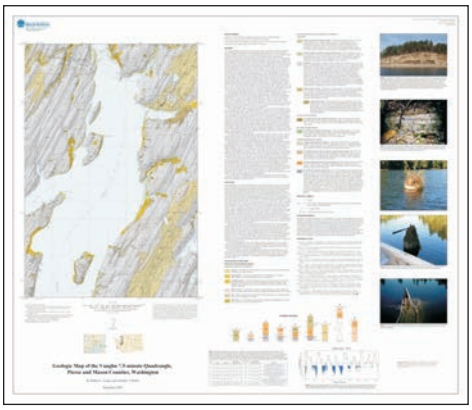


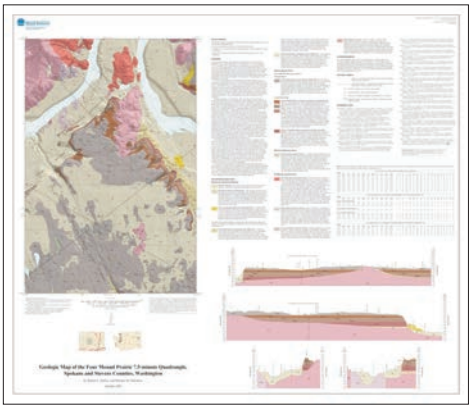
Figure 1. Shaded relief map showing Washington State's 1500 7.5-minute quadrangles, the long-range mapping plan areas, and 1:24,000-scale mapping by DGER and other organizations. Since its inception in 1992 when authorized by the National Cooperative Geologic Mapping Act, the STATEMAP Program has enabled the Washington Division of Geology and Earth Resources to improve map quality and coverage throughout the state. We have completed the whole state at 1:100,000 scale [http://www.dnr.wa.gov/geology/gmaps100.htm] and have made a good start on 1:24,000-scale mapping. More information on completed geologic maps can be found in the DGER online bibliography [http://www2.wadnr.gov/dbtw-wpd/washbib.htm] and map index [http://www.dnr.wa.gov/geology/mapindex.htm], the USGS National Geologic Map Database [http://ngmdb.usgs.gov/], Pacific Northwest Urban Corridor geologic maps [http://geomaps.wr.usgs.gov/pacnw/mapgeo.html], and the University of Washington Pacific Northwest Center for Geologic Mapping Studies [http://geomapnw.ess.washington.edu/index.php].

NEW DGER PUBLICATIONS

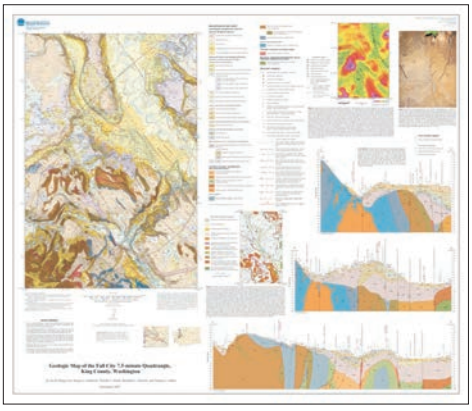
7.5-minute Quadrangle Maps



GM-65. Geologic map of the **Vaughn** 7.5-minute quadrangle, Pierce and Mason Counties, Washington, by Robert L. Logan and Timothy J. Walsh. 2007. 42 x 36 in. color sheet, scale 1:24,000. [http://www.dnr.wa.gov/geology/pdf/gm65.pdf]



GM-66. Geologic map of the **Four Mound Prairie** 7.5-minute quadrangle, Spokane and Stevens Counties, Washington, by Robert E. Derkey and Michael M. Hamilton. 2007. 42 x 36 in. color sheet, scale 1:24,000. [http://www.dnr.wa.gov/geology/pdf/gm66.pdf]



GM-67. Geologic map of the **Fall City** 7.5-minute quadrangle, King County, Washington, by Joe D. Dragovich, Megan L. Anderson, Timothy J. Walsh, Brendon L. Johnson, and Tamara L. Adams. 2007. 42 x 36 in. color sheet, scale 1:24,000, with 16 p. text. [http://www.dnr.wa.gov/geology/pdf/gm67.zip]

Open File Report 2007-3. Sand point count and geochemical data in the **Fall City** and **Carnation** 7.5-minute quadrangles, King County, Washington, by Joe D. Dragovich. Contains four files in Microsoft Word (explanation), Microsoft Excel (point count and geochemical data), and Adobe PDF (sample site map) formats. Web only. [http://www.dnr.wa.gov/geology/pubs/pubs_ol.htm]

Maps of the **Camano**, **Juniper Beach**, and **Langley** quadrangles are in preparation and should be finished early next year.

Abandoned Mine Reports

Information Circular 105. Inactive and abandoned mine lands—**Young America mine**, Bossburg mining district, Stevens County, Washington, by Fritz E. Wolff, Donald T. McKay, Jr., Matthew I. Brookshier, and David K. Norman. 2007. 12 p. Web only. [http://www.dnr.wa.gov/geology/iaml/ic105.pdf]

Information Circular 106. Inactive and abandoned mine lands—**Bodie mine**, Wauconda mining district, Okanogan County, Washington, by Fritz E. Wolff, Matthew I. Brookshier, Donald T. McKay, Jr., and David K. Norman. 2007. 16 p. Web only. [http://www.dnr.wa.gov/geology/iaml/ic106.pdf]

Liquefaction Susceptibility and Site Class Maps

Open File Report 2004-20. Liquefaction susceptibility and site class maps of **Washington State**, by county, by Stephen P. Palmer, Sammantha L. Magsino, Eric L. Bilderback, James L. Poelstra, Derek S. Folger, and Rebecca A. Niggemann. 78 sheets, with 45 p. text. Web only. [http://www.dnr.wa.gov/geology/pubs/ofr04-20/]

Status of 7.5-minute Quadrangle Mapping in Washington State

Geologic maps are basic to understanding Washington's complex geology. The State Geologist and Geologic Mapping Advisory Committee have established a long-range plan to prioritize which USGS 7.5-minute (1:24,000-scale) topographic quadrangles to map, based on perceived need. Need is primarily equated with public safety and natural resource issues. Thus the long-range plan focuses on areas with high population density, important public infrastructure, and (or) important scientific or resource issues. See Figure 1 (p. 2) for current mapping status.

Tsunami Evacuation Brochures

New and revised tsunami evacuation brochures for the following communities are available online at http://www.dnr.wa.gov/geology/hazards/tsunami/evac/:

GRAYS HARBOR COUNTY: Aberdeen and Hoquiam; Cosmopolis and South Aberdeen; Ocean City, Copalis Beach, Pacific Beach, and Moclips; Ocean Shores and vicinity; Westport, Grayland, and Ocosta

JEFFERSON COUNTY: Hoh Reservation

PACIFIC COUNTY: Bay Center and vicinity; Long Beach and Ilwaco; North Cove and Tokeland; Ocean Park and vicinity; Raymond and South Bend

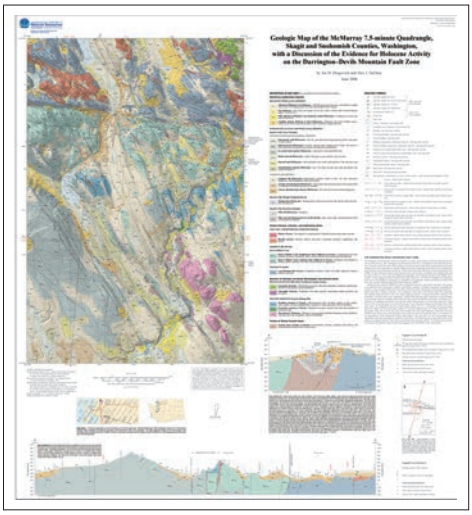
WHATCOM COUNTY: Bellingham; Lummi Reservation; Point Roberts; Sandy Point ■

MCMURRAY 7.5-MINUTE QUADRANGLE WINS AWARD

DGER's GM-61 "Geologic Map of the McMurray 7.5-minute Quadrangle, Skagit and Snohomish Counties, Washington", by Joe D. Dragovich and Alex J. DeOme, has won Best Geologic Map in the Avenza 2006 MAPublisher Map Competition. This is our second win—GM-53, "Geologic Map of Washington State" won both Best Map of 2005 and Best Geologic Map in 2005.

The competition is open to all maps created with MAPublisher and (or) Geographic Imager, products of Avenza Systems Inc. MAPublisher software allows maps developed in a geographic information system [GIS] to be imported into a high-end graphics program, linking the spatial attributes and data to the graphic interface. This competition draws entries from all over the globe. All winning submissions are posted on the Avenza website at http://www.avenza.com/MPcomp/2006, and a copy is sent to the Avenza Collection (established in 2003) in the Library of Congress.

To make the McMurray map, geologists Joe Dragovich and Alex DeOme digitized and attributed the polygons, points, and lines on their scale-stable field map into ArcInfo 9.2. Eric Schuster made the base map, and he and Anne Heinitz brought the ArcInfo shapefiles into Adobe Illustrator CS2 through the MAPublisher plug-in. MAPublisher provided access to line and polygon attributes to assign line types for contacts, faults, and folds, as well as geologic unit labels and colors for geologic polygons.



The text was added and the published version of the map was crafted in Adobe Illustrator by Jari Roloff.

The 33 x 36-inch full-color map comes with an 18-page pamphlet. GM-61 may be purchased for $23.48 from the Washington State Department of Printing at http://www.prt.wa.gov/ or downloaded at http://www.dnr.wa.gov/geology/pubs/pubs_ol.htm.

Details on the 2007 MAPublisher Map Competition are available at http://www.avenza.com/MPcomp/. ■

QUARTERLY MEETING SPOTLIGHTS SEISMIC REFRACTION INVESTIGATIONS

On Oct. 10, DGER had its quarterly all-hands meeting to help staff learn about programs in other sections. This meeting was hosted by the Geologic Hazards Section and demonstrated the process of seismic data acquisition. The goal of this seismic survey was to determine the depth to bedrock at the south end of Black Lake near Olympia. Everyone got a chance to swing the sledgehammer! ■

Tim Walsh, head of the Geologic Hazards Section, explains how a seismic line works.

Seismologist Trevor Contreras describes the equipment in the mobile seismic unit.

DGER staff lays out the seismic line in Kennydell Park parking lot to determine the depth to bedrock.

Staff members place geophones every 5 ft with the help of a tape measure.

Geologist/cartographer Eric Schuster provides the seismic source by hitting a metal plate with a sledgehammer.

Seismologist Ray Cakir monitors data acquisition on a laptop. In the background from the left: State Geologist Ron Teissere, Assistant State Geologist John Bromley, and cartographer Robert Berwick.

DGER COMBINED FUND DRIVE RAISES MONEY FOR CHARITY

During the month of October, DGER staff raised more than $2500 for charity through the Combined Fund Drive (CFD), the State equivalent of the United Way. The star event was a gift basket auction, put together by Jari Roloff and Mary Ann Shawver, that raised $875. Geology Librarian Lee Walkling brought in $709 with a rock auction and $736.25 with a tag sale in the library. Half the money Lee raised will be donated to the American Geological Institute (AGI) and half to the Mineral Information Institute to support geologic education.

Some of the 30+ gift baskets offered for bidding in the Combined Fund Drive Silent Auction on Oct. 12. Items in the baskets were donated by DGER staff and the baskets were assembled by Jari Roloff and Mary Ann Shawver.

AGI (http://www.agiweb.org/) is a non-profit federation that plays a major role in strengthening geoscience education and increasing public awareness of the vital role geosciences play in society's use of resources and their effect on the environment.

The Mineral Information Institute (http://www.mii.org/) works to improve understanding of our mineral and energy resources by supporting classroom teachers.

Tara Salzer, who did a stellar job as DGER CFD Coordinator, created screen savers that raised $78. A minestrone, salad, and fresh-baked bread lunch by Debbie Grant earned $157. Money raised from these events was distributed to a variety of local, national, and international charities. ■

STAFF NOTES

Trevor Contreras of the Geologic Hazards Section passed both the Fundamentals of Geology and Practice of Geology licensing exams in September. He is now a Licensed Geologist in the State of Washington. The tests are administered by the National Association of State Boards of Geology (ASBOG®).

Robert Berwick has accepted a permanent position as a Cartographer 2. He has worked as a temporary Office Assistant 3 for the past year on the Coal Mine Map Scanning Project. Robert is currently working on the Palmer Coking Coal Project—Palmer owner Bill Kombol has loaned us about 1000 historic mine maps to be scanned and returned over the next year. ■

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