



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. 3, No. 4, Winter 2006

## DGER IN THE FIELD

On October 9th, DGER had its first all-day staff meeting in 16 years. The purpose of the meeting was to help staff get to know each other better and learn about programs in other sections. The day started out at the Lacey Community Center with a staff meeting that later broke into groups to brainstorm ideas for a permanent geologic display in the rotunda of the Natural Resources Building.

After lunch the Division went on a field trip to the Holroyd gravel pit in the Nisqually delta, one of the sand and gravel mines regulated by DGER. The Holroyd pit was started about the same time Washington became a state. At the pit, DGER geologist Tim Walsh gave a talk on the glacial stratigraphy of the Nisqually delta, which can be seen in the pit walls (Fig. 1). Walsh was the lead author on the geologic map of the Nisqually 7.5-minute quadrangle, which covers this area (Walsh and others, 2003).

The group then moved on to the Mima (my'-muh) Mounds near Littlerock, 12 miles southwest of Olympia. The Mima Mounds Natural Area Preserve, managed by the Washington State Department of Natural Resources, is the best remaining example of the mounded prairie of Western Washington. The mounds themselves (Fig. 2) have been described as looking like a sea of giant, half-buried bowling balls 8 feet tall and 30 feet across.

DGER geologist Josh Logan gave a talk on the formation of the Mima Mounds. Many theories have been put forth to explain how the mounds were formed: glacial, seismic, or biological (pocket gophers), but nobody really knows. We do know a little bit more about when they were formed since Josh mapped the East Olympia 7.5-minute quadrangle two quads to the east, which also has Mima Mounds. Josh is beginning to formulate a theory of his own on Mima Mound formation, but you will have to wait for the rest of the story. The Maytown quad immediately to the east is in our STATEMAP

*Continued on next page*



**Figure 1.** DGER staff at the Holroyd gravel pit in the Nisqually River delta. From the left: (back row) Tommy Duerr, Chris Johnson, Bob Mead, Hank Schasse, Eric Schuster, Belle Sarikhan, Chuck Caruthers, Carol Serdar, Chuck Gulick; (middle row) Fritz Wolff, Shannon Franks, Tara Salzer, Karen Meyers, Anne Heinritz, Ron Teissere, Tim Walsh, Loren Baker (hidden), Bob Derkey, Doreen Smith, Michael Polenz, Joe Dragovich; (front row) Dave Norman, Josh Logan, Lee Walkling, Mary Ann Shawver, Jari Roloff, Ray Cakir, and John Bromley. The glacial stratigraphy of the Nisqually delta, can be seen in the pit walls.

## MESSAGE FROM THE STATE GEOLOGIST

The Division of Geology and Earth Resources has been working hard to rebuild its hazard and subsurface mine regulatory programs after receiving additional funding for fiscal year 2007 from the legislature. We expect the first products from this funding increase to be available during the summer of 2007.

The agency has forwarded five new budget proposals from the Division to the Office of Financial Management as part of its 07-09 biennium budget request. The proposals include funding for: (1) data collection to support geologic hazard assessments; (2) the initial planning for an online statewide three-dimensional geologic database; (3) three-dimensional aquifer characterization study of Lincoln County; (4) assessment of the viability of the proposed tsunami evacuation routes after a subduction



**Ron Teissere**  
State Geologist

zone earthquake; and (5) systematic mapping of aggregate resources on a county by county basis. We're hopeful that the Governor will include these decision packages in her budget submittal to the legislature.

The increased funding has allowed the Division to fill the vacant assistant state geologist position that was eliminated in budget cuts several years ago. John Bromley has been appointed as Assistant Division Manager for Surface Mining and Dave Norman will be the Assistant Division Manager for Geology Programs. The Division is continuing to work on filling three vacant surface mine inspector positions. These positions must be licensed geologists. We also have one vacant position for a geologist in the Hazards Section and one vacant information technology position in our Editing/GIS Section. ■

mapping proposal for next year and work there may help unravel the mystery. For more information about the Mima Mounds, go to [http://www.wintersteel.com/Mima\\_Mounds.html](http://www.wintersteel.com/Mima_Mounds.html) and [http://www.dnr.wa.gov/htdocs/adm/comm/2004\\_news\\_releases/nr04\\_015fact sheet.pdf](http://www.dnr.wa.gov/htdocs/adm/comm/2004_news_releases/nr04_015fact sheet.pdf).



**Figure 2.** The Mima Mounds Natural Area Preserve, managed by the Washington State Department of Natural Resources, is the best remaining example of the mounded prairie of Western Washington.

## References

- Walsh, T. J.; Logan, R. L.; Polenz, Michael; Schasse, H. W., 2003, Geologic map of the Nisqually 7.5-minute quadrangle, Thurston and Pierce Counties, Washington: Washington Division of Geology and Earth Resources Open File Report 2003-10, 1 sheet, scale 1:24,000. [<http://www.dnr.wa.gov/geology/pdf/ofr03-10.pdf>]
- Walsh, T. J.; Logan, R. L., 2005, Geologic map of the East Olympia 7.5-minute quadrangle, Thurston County, Washington: Washington Division of Geology and Earth Resources Geologic Map GM-56, 1 sheet, scale 1:24,000. [[http://www.dnr.wa.gov/geology/pubs/pubs\\_ol.htm](http://www.dnr.wa.gov/geology/pubs/pubs_ol.htm)]
- Washburn, A. L., 1988, Mima mounds—An evaluation of proposed origins with special reference to the Puget Lowlands: Washington Division of Geology and Earth Resources Report of Investigations 29, 53 p. ■

## DGER COMBINED FUND DRIVE RAISES MONEY FOR CHARITY

In the months of October and November, DGER raised \$2137.81 for charity through the Combined Fund Drive or CFD (the State equivalent of the United Way). Geology Librarian Lee Walking brought in \$974.35 with a rock auction and a yard sale. She also sold packets of m&m's dressed up as candy pills. Some of the money she raised (\$200 each) will be donated to the American Geological Institute (AGI) and the Mineral Information Institute to support geologic education.

AGI (<http://www.agiweb.org/>) is a nonprofit federation that represents more than 100,000 earth scientists. Founded in 1948, AGI provides information services to geoscientists, serves as a voice for our profession, plays a major role in strengthening geoscience education, and strives to increase public awareness of the vital role the geosciences play in society's use of resources and interaction with the environment.

The Mineral Information Institute (<http://www.mii.org/>) works to improve the awareness, understanding, and appreciation of our mineral and energy resources by supporting classroom teachers. It provides instructional materials ranging from five-minute supplements to a full-year high



In the Geology Library, bidders get in that last bid in the last few moments before the end of the Combined Fund Drive Silent Auction on Nov. 14.

school science curriculum. Their materials are scientifically based, balanced, and relevant.

Other DGER staff hosted CFD events: Jari Roloff, Mary Ann Shawver, and Lee Walking put together a silent auction of 39 baskets plus other items that raised \$976.50, and Tara Salzer, CFD Coordinator, created a screen saver from DGER photos that raised \$186.96. Money from these events was distributed to a variety of local, national, and international charities. ■

## USGS DATA IN GOOGLE EARTH

The USGS has made some of its geological data available in Google Earth format at <http://tin.er.usgs.gov/>. You just download it. It is automatically available in Google Earth without any further work on your part. Very handy, very powerful, and very cool! ■

## SURFACE MINING REPORT

A report to the Washington State legislature on "Recommendations Regarding the Administration of the Surface Mine Reclamation Act, Chapter 78.44 RCW" is now online at <http://www.dnr.wa.gov/geology/pdf/6175report.pdf>. The report details conclusions and recommendations for action by the legislature that are supported by a majority of the Committee members.

Issues discussed include:

- Illegal mining,
- Enforcement provisions of Chapter 78.44 RCW,
- Definitions used in Chapter 78.44 RCW,
- Land-use planning affecting mining and reclamation,
- Delegation of enforcement authority for reclamation by DNR to local government,
- Landowner accountability for reclamation,
- Permitting process, including State Environmental Policy Act (SEPA) decisions and compliance with the provisions of SEPA documents, and
- Management/accountability of DNR for use of program funds, including staffing, resource mapping, and support for the industry at the local jurisdiction level.

The report was submitted Sept. 1, 2006, on behalf of the Surface Mine Reclamation Advisory Committee by DGER. ■

## ONLINE GLOSSARY OF GEOLOGY

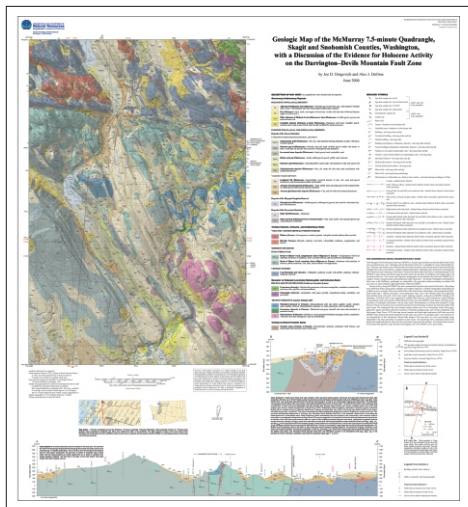
The American Geological Institute (AGI) "Glossary of Geology" is now available online for both individual and institutional licensing. The glossary offers all 40,000 terms included in the latest print edition (the 5th), plus over 1000 updates that have been made since its publication in 2005. The online glossary is searchable using terms, words within terms or definitions, and categories.

The online glossary includes several enhancements over the print edition. Images from the Earth Science World Image Bank, maintained by AGI, are displayed for rocks, minerals, fossils, and landforms whenever possible. For quick reference, hyperlinks for similar or related terms are included. Also, most of the glossary terms are also available in Spanish, both for searching and browsing.

When the print edition is purchased direct from AGI, the buyer will receive a free 6-month individual license to the online glossary. To access licensing information and a free 30-day trial, go to <http://www.agiweb.org/pubs/glossary/>. ■

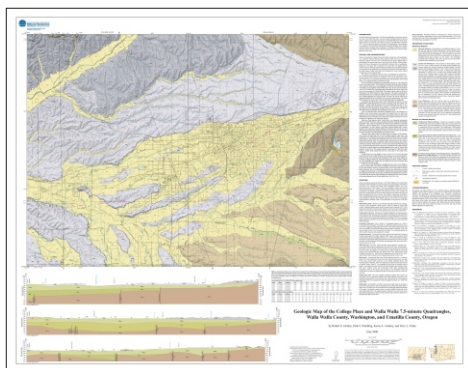


# NEW DIVISION RELEASES



## McMurray 7.5-minute Quadrangle

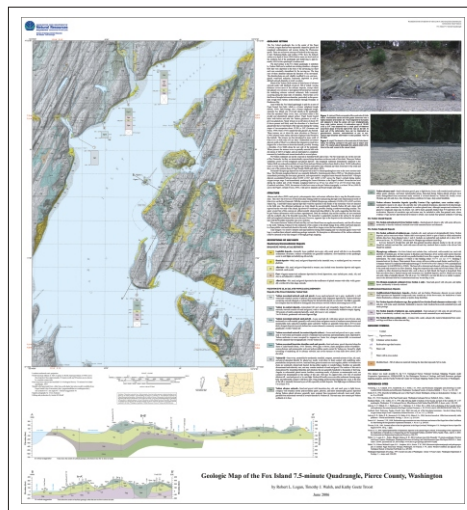
GM-61. Geologic map of the McMurray 7.5-minute quadrangle, Skagit and Snohomish Counties, Washington, with a discussion of the evidence for Holocene activity on the Darrington-Devis Mountain fault zone, by J. D. Dragovich and A. J. DeOme. 2006. 33 x 36 in. color sheet, scale 1:24,000, with 18 p. text. (\$23.48 from the Department of Printing. Free online at <http://www.dnr.wa.gov/geology/pdf/gm61.zip> [71.0 MB]). This is the last map in a series that covers the extent of the Darrington-Devis Mountain fault zone, which is why there is an additional pamphlet describing what we have learned about the fault zone.



## College Place and Walla Walla 7.5-minute Quadrangles

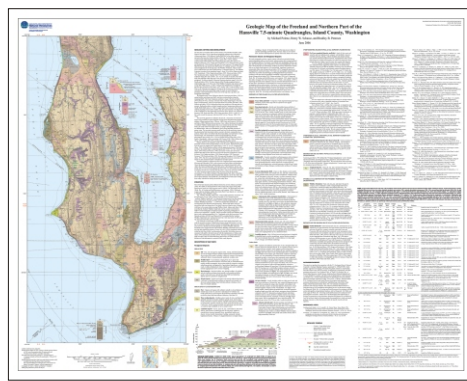
GM-62. Geologic map of the College Place and Walla Walla 7.5-minute quadrangles, Walla Walla County, Washington, and Umatilla County, Oregon, by R. E. Derkey, D. F. Stradling, K. A. Lindsey, and T. L. Tolan. 2006. 46 x 36 in. color sheet, scale 1:24,000. (\$22.18 from the Department of Printing. Free online at <http://www.dnr.wa.gov/geology/pdf/gm62.pdf> [50.3 MB]). This map

was developed to help local government locate and protect water and other resources as required by the Growth Management Act.



## Fox Island 7.5-minute Quadrangle

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. (\$22.18 from the Department of Printing. Free online at <http://www.dnr.wa.gov/geology/pdf/gm63.pdf> [38.4 MB]). This map was done in collaboration with the University of Washington to delineate Quaternary stratigraphy. It includes new radiocarbon dates on the Olympia beds.



## Freeland and Hansville 7.5-minute Quadrangles

GM-64. Geologic map of the Freeland 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. (\$22.18 from the Department of Printing. Free online at <http://www.dnr.wa.gov/geology/pdf/gm64.pdf> [31.5 MB]). This map completes our mapping of Island

County and presents new evidence on the Southern Whidbey Island fault.

## First Thought Mine, Orient Mining District, Stevens County, Washington

Information Circular 103. Inactive and abandoned mine lands—First Thought Mine, Orient Mining District, Stevens County, Washington, by F. E. Wolff, D. T. McKay, Jr., and D. K. Norman. 2006. 13 p. (web only, <http://www.dnr.wa.gov/geology/iaml/ic103.pdf>).

## Ordering Information

Publications sold through the Washington State Department of Printing may be ordered through the online General Store (<http://www.prt.wa.gov>). Select "Shop by Agency", then "Department of Natural Resources (Geology Division)". Publications are organized by series, and prices include shipping and handling; follow the website instructions to complete your purchase. ■

## ENCYCLOPEDIA OF EARTH

Designed as a reference on understanding and managing the environment, the Encyclopedia of Earth encourages scientists from around the world to join in creating a comprehensive, authoritative source of information about the environments of Earth and their interactions with society. The encyclopedia is written and governed by experts working in a unique collaborative environment. It has been released through the initial work of about 300 authors and 100 topic editors. The encyclopedia's oversight comes from an outstanding group of international scholars.

Scientists can write on or edit any topic that interests them and that falls within the scope of the encyclopedia. Entries are from 250 to 5000 words and geared to a general audience. Articles can be drawn directly from existing material an author has written, subject to any copyright restrictions. The encyclopedia is built, maintained, and governed by experts via a specially adapted "wiki", an online resource that allows users to add and edit content collectively. Unlike other wikis, access to the encyclopedia wiki is restricted to approved experts, and all content is peer reviewed and approved prior to being published at the free public site.

Contributing is easy: visit <http://www.eoearth.org/>, click on BECOME A CONTRIBUTOR, and follow the guidelines. ■

## STAFF NOTES

**Recep (Ray) Cakir** is the new Senior Geologist for the Geologic Hazard Section. Ray has a B.S. in geophysical engineering (under the Geological Engineering Program) and M.S. in marine geology and geophysics from the Institute of Marine Sciences and Technology at Dokuz Eylul University (formerly known as Aegean University), Izmir, Turkey. He also has an M.S. in geosciences and a Ph.D. in geo-environmental engineering from the College of Earth and Mineral Sciences at Pennsylvania State University.



Prior to joining the Division, Ray worked on projects such as GIS-based earthquake microzonation, seismic hazard assessment, basement rock depth determination, and geo-archaeological hazards and problems in Egypt. He was also a geospatial analyst and researcher at the Center of Environmental Informatics, College of Earth and Mineral Sciences, Pennsylvania State University.

**Bob Mead** has been hired as a new Surface Mine Reclamation Geologist. Bob evolved on Olympia's West Side. His roots trace back to 1883 when his family first settled in the area. He has a Washington Pioneer certificate proudly displayed among the geologic rubble in his cube.



Bob has a B.S. in geology from the University of Washington and an M.S. from the University of Michigan. His early career in the mining industry provided a colorful education in exotic places like Wallace, Idaho; Lincoln, Montana (while the Unabomber lived nearby); and Truth or Consequences, New Mexico.

After 8 years chasing gold and silver, Bob returned to Olympia to work as a hydro-geologist for the Thurston County Health Department for 15 years. He took jobs at the Washington State Department of Transportation and as a substitute teacher at Mary M. Knight School in Matlock before coming to work for DGER in August of 2006.

Bob is delighted to return closer to his natural habitat in DGER's Surface Mining Section. He looks forward to many happy and productive times crawling among the mines and quarries.

**John Bromley** has been promoted to Assistant Division Manager for Surface Mining after 3 years as a Natural Resource Scientist 3. Previously John gained extensive experience with geotechnical and environmental consulting projects in the Pacific Northwest during his 15 years with Hart Crowser, Inc. in Seattle. John graduated from Washington State University with a B.S. in geology. He is a licensed as a geologist and engineering geologist in the State of Washington.



**Anne Heinritz**, a GIS Analyst in the Editing/ GIS Section, was promoted to the position of Lead GIS Analyst in October. Her new responsibilities include managing the section's GIS workload, monitoring the quality of the DGER's GIS and cartographic products, and providing guidance and decision-making on GIS and cartographic procedures and standards. She also serves as DGER's Geology Data Steward, ensuring that geologic data produced and stored by the DGER are accurate, consistent, appropriately precise, available, secure, and well documented. Anne has been with DGER for 12 years. She has a B.S. in geography from Oregon State University, Corvallis.



**Mary Ann Shawver** has been promoted from Natural Resource Specialist 1 to NRS 2. Her duties have expanded from processing surface mining permits to processing oil & gas permits, setting up tours and meetings, and supervising the Front Office. Mary Ann has worked for DGER since 1989.



**Robert Berwick** has been hired to complete the coal mine map scanning project that is being funded by the U.S. Department of the Interior, Office of Surface Mining. Robert recently completed a



B.A. in Urban Studies with a minor in GIS and spatial modeling at the University of Washington, Tacoma. While attending college, he worked on various projects for the State, including a historical preservation project for the Department of Transportation and State Archives, and a GIS-based ground water susceptibility pilot project for the Department of Agriculture. Prior to his educational endeavors, he worked as a construction foreman, heavy equipment operator, and pipe layer. Robert is originally from California. He moved to the Northwest 16 years ago, and has lived in Olympia for the past 12 years.

**Eric Bilderback** has left DGER to take a position as a Transportation Engineer 3 with the Washington State Department of Transportation. While he was with DGER, Eric worked on the Hazard Mitigation Grant Program Project, providing creative solutions for producing energy sources for shear wave velocity studies and innovative data management on the Landslide Hazard Zonation Project. We will miss Eric and wish him well.

**Isabelle Sarikhan** has produced a Geologic Map of the Known World for the official website of the TSR Inc. setting of Mystara, a role-playing game. Check it out at <http://www.pandius.com/isabelle.html>. ■

### DGER JOB OPENINGS

**Geologic Hazards Scientist 2**—Supports the assessment of seismic risk and landslide hazards by the Division. Prepares databases and maps depicting these hazards. [[http://www.dnr.wa.gov/jobs/2006\\_6847.pdf](http://www.dnr.wa.gov/jobs/2006_6847.pdf)]

**GIS Analyst**—Uses GIS skills to input, analyze, and maintain spatial and tabular geologic data and to generate geologic maps. Provides training and support to the Division's GIS users. [[http://www.dnr.wa.gov/jobs/2006\\_2384.pdf](http://www.dnr.wa.gov/jobs/2006_2384.pdf)]



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### DGER NEWS

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