

Sarah Linfield Brown Lewis

Senior Faculty Research Assistant, College of Earth, Ocean and Atmospheric Sciences (CEOAS), Oregon State University, Corvallis, Oregon

Education

MS, 1999, Geology, University of Vermont, Burlington, Vermont

BS *cum laude*, 1996, Geological Sciences, Tufts University, Medford, Massachusetts

Professional Experience

7/09-present	Senior Faculty Res. Asst. I	CEOAS, Oregon State University, Corvallis
10/01-6/09	Faculty Research Asst.	Dept. of Geosciences, Oregon State University, Corvallis
6/05 – 5/07	Science Instructor	Willamette Valley Watershed Partnership Project, Oregon
3/99 - 1/01	Staff/Project Geologist	Terraresearch, Inc., San Jose, California
7/97 – 7/98	Field Intern	NAGT/USGS Earthquake Hazards Group, Pacific Northwest

Grants Received

2010 - 2012 Grant, G. & **Lewis, S.** Risk analysis for climate warming impacts on summer streamflow. Funded by Oregon Watershed Enhancement Board, \$140,250.

2008 - 2010 Grant, G., Tague, C. & **Lewis, S.** Near- and long-term effects of climate change on streamflow and water quality in the upper McKenzie River, OR. Funded by Eugene Water and Electric Board, \$90,000.

2007 - 2008 Nolin, A, Jefferson A. & **Lewis S.** Contributions of Glacier Melt to Upper Hood River Streamflow and Implications of Climate Change. Funded by Institute for Water and Watersheds, Oregon State University. \$30,092.

2005 - 2008 Grant, G., Jefferson, A, **Lewis, S.** & Tague, C. Discharge, source areas, and water ages of spring-fed streams and implications for water management in the McKenzie River Basin. Funded by Eugene Water and Electric Board. \$60,000.

2005 - 2006 Grant, G., Cissel, J., Lancaster, S., McDonnell, J., Swanson, F., & **Lewis, S.** Forest Management effects on peak storm flows and consequent effects on stream channel morphology – science synthesis and management interpretations. Funded by BLM sponsored CESU Research Project. \$20,474.

2005 Grant, G., & **Lewis S.** Potential Effects of Gravel Augmentation on Temperature in the Clackamas River Oregon: A Targeted Literature Review. Funded by Portland General Electric. \$3,000.

Publications in Preparation or Review

Grant, G., Hayes, S., **Lewis, S.L.**, and Safeeq, M. Geomorphic response to peak flow increases due to forest harvest activities, Western Cascades, Oregon, in preparation for Water Resources Research

Refereed Publications ([google scholar profile](#))

Grant, G. **Lewis, S.**, 2015., The Remains of the Dam: What have we learned from 15 years of US dam removals, in *River Basins, Reservoir Sedimentation and Water Resources* Lolino, G., Arattano M., Rinaldi, M., Guistolisi, O., Marechal, J.C., and Grant, G.E. Eds. Engineering Geology for Society and Territory, Volume 3, Springer, Switzerland, p31-35.

- Grant, G. **Lewis, S.**, Stewart, G. and Glasmann, J.R., 2015. Sediment problems and consequences during temporary drawdown of a large flood control reservoir for environmental retrofitting, in *River Basins, Reservoir Sedimentation and Water Resources* Lolino, G., Arattano M., Rinaldi, M., Guistolisi, O., Marechal, J.C., and Grant, G.E. Eds. Engineering Geology for Society and Territory, Volume 3, Springer, Switzerland, p27-30.
- Safeeq, M., Grant G., **Lewis, S.**, Kramer, M., Staab, B., 2014. A geohydrologic framework for characterizing summer streamflow sensitivity to climate warming in the Pacific Northwest, USA. *Hydrology and Earth Systems Sciences* 18, 1-18. Doi:10.5194/hessd-18-3693-2014.
- Safeeq, M. Grant, G., **Lewis, S.** and Tague, C. 2013. Coupling Snowpack and Groundwater Dynamics to Interpret Historical Streamflow Trends in the Western United States. *Hydrological Processes* 27:655-668. DOI: 10.1002/hyp.9628
- Nolin, A.W., Phillippe, J., Jefferson, A., **Lewis, S.L.** 2010. Present-day and Future Contributions of Glacier Melt to a Summertime Flows in a Pacific Northwest Watershed: Implications for Water Management, *Water Resources Research*, DOI: 10.1029/2009WR008968. 14p
- Jefferson, A., Grant, G., Lancaster, S., and **Lewis, S.L.**, 2010, Coevolution of hydrology and topography on a basalt landscape in the Oregon Cascade Range, USA, *Earth Surface Processes and Landforms* DOI: 10.1002/esp.1976. 14p.
- Jefferson, A., Nolin, A., **Lewis, S.**, and Tague, C., 2008. Hydrogeologic controls on streamflow sensitivity to climatic variability, *Hydrological Processes* 22: 4371–4385. DOI: 10.1002/hyp.7041.
- Tague, C., Farrell, M., Grant, G. **Lewis, S.** and Rey, S. 2007. Hydrogeologic controls on summer stream temperatures in the McKenzie River basin, Oregon, *Hydrologic Processes* 21: 3288–3300.
- Grant, G.E., Schmidt, J.C. and **Lewis, S.L.** 2003. A Geological Framework for Interpreting Downstream Effects of Dams on Rivers in J.E. O'Connor and G.E. Grant eds. *A Peculiar River*. American Geophysical Union, p209-225.
- Brown, S.L.**, Bierman, P.R., Lini, A., Davis, P.T. and Southon, J., 2002. Reconstructing lake and drainage basin history using terrestrial sediment layers: analysis of cores from a post-glacial lake in New Wngland, USA: *Journal of Paleolimnology*, v.28, no.2 p.219-236.
- Benson, B.E., Atwater, B.F., Yamaguchi, D.K., Amidon, L.J., **Brown, S.L.**, and Lewis, R.C., 2001. Renewal of tidal forests in Washington state after a subduction earthquake in A.D. 1700: *Quaternary Research*, v. 56, no. 2, p.139-147.
- Brown, S.L.**, Bierman, P.R., Lini, A, and Southon, J., 2000. 10 000 yr record of extreme hydrologic events: *Geology*, v.28, p.335-338.
- Ridge, J.C., Besonen, M.R., Brochu, M., **Brown, S.**, Callahan, J.W., Cook, G.J., Nicholson, R.S., and Toll, N.J., 1999. Varve, paleomagnetic, and 14C chronologies for late Pleistocene events in New Hampshire and Vermont: *Geographie physique et Quaternaire*, v. 53, p.79-106.

Peer-Reviewed Reports

- Grant, Gordon E.; **Lewis, Sarah L.**; Swanson, Frederick J.; Cissel, John H.; McDonnell, Jeffrey J. 2008. Effects of forest practices on peak flows and consequent channel response: a state-of-science report for western Oregon and Washington. Gen. Tech. Rep. PNW-GTR-760. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 76p.
- Jefferson, A., Grant, G., and **Lewis, S.**, 2007. A river runs underneath it: geological control of spring and channel systems and management implications, Cascade Range, Oregon. In M.J. Furniss, C.F. Clifton, and K.L. Ronnenberg, eds. *Advancing the Fundamental Sciences: proceedings of the Forest Service national earth sciences conference*. PNW-GTR-689. Portland, OR: U.S.D.A. Forest Service, PNW Research Station. p391-400.

Technical Reports and Conference Proceedings

Grant, G.E. and **Lewis, S.L.** *in press*. The Remains of the Dam: what have we learned from 15 years of US Dam removals? International Association of Engineering Geology 2014 Conference Proceedings, Torino, Italy.

Grant, G.E., **Lewis, S.L.**, Stewart, G. and Glasmann, J.R. *in press*. Sediment problems and consequences during temporary drawdown of a large flood control reservoir for environmental retrofitting. International Association of Engineering Geology 2014 Conference Proceedings, Torino, Italy.

Grant, G.E., Marr, J.D.G., Hill C., Johnson, S., Campbell K., Mohseni, O., Wallick, J.R., **Lewis, S.L.**, O'Connor, J.E., Major, J.J., and Burkholder, B.K. 2008. Experimental and field observations of breach dynamics accompanying erosion of Marmot cofferdam, Sandy River, Oregon. Proceedings of the World Environmental and Water Resources Congress, Ahupua'a Hawaii. American Society of Civil Engineers.

Grant, G., Burkholder, B., Jefferson, A., **Lewis, S.** and Haggerty, R. 2006. Hyporheic flow, temperature anomalies, and gravel augmentation: Preliminary findings of a field investigation on the Clackamas River, Oregon. report prepared for Portland General Electric, dated Dec 6, 2006.

Lewis S.L., Grant, G.E., and Stewart, G. 2005. Literature Review of Possible Effects of Gravel Augmentation on Stream Temperature. Report prepared for Portland General Electric, dated March 7, 2005.

Grant, G.E., **Lewis, S.L.** and Kast, P., 2002. Sediment Mass Balance for Cougar Reservoir Sediment Releases. Report prepared for U.S. Army Corps of Engineers, Portland District Office, dated November 5, 2002.

Stewart, G., Glasmann, J.R., Grant, G.E., **Lewis, S.L.** and Ninneman, J., 2002. Evaluation of Fine Sediment Intrusion into Salmon Spawning Gravels as Related to Cougar Reservoir Sediment Releases. Report prepared for U.S. Army Corps of Engineers, Portland District Office, dated October 4, 2002.

Bierman, P. R., **S. Brown**, et al. 2001. Post-glacial Surface Processes of northern New England. GSA Field Trip Guide, Boston 2001.

Ridge, J.C., Thompson, W.B., Brochu, M., **Brown, S.** Fowler, B., 1996. Glacial geology of the upper Connecticut Valley in the vicinity of the lower Ammonoosuc and Passumpsic Valleys of New Hampshire and Vermont. Guidebook to Field Trips in Northern New Hampshire and Adjacent Regions of Maine and Vermont: New England Intercollegiate Geologic Conference, 88th Annual Meeting p309-340.

Recently Published Abstracts

Safeeq, Mohammad, Grant, Gordon, **Lewis, Sarah**, Staab, Brian P. Understanding atmospheric and landscape level drivers of peak flow variability in the Pacific Northwest, USA. presented at 2013 AGU Fall Meeting, San Francisco, Calif. 9-13 Dec.

Hempel, Laura, Grant, Gordon, and **Lewis, Sarah**. A comparison of hydrology and channel hydraulics in headwater streams of the central Oregon Cascades. presented at 2013 AGU Fall Meeting, San Francisco, Calif. 9-13 Dec.

Lewis, Sarah L., Safeeq, Mohammad, Jefferson, Anne J., and Grant, Gordon E. Revisiting Watershed Drainage Density: New Considerations for Hydrologic Prediction. 2013 Geological Society of America Annual Meeting, Abstracts with Programs Vol 45 No 7 p578.

LovellFord, R.M., Flitcroft, R. Santelmann, M.V., Grant, G.E., Safeeq, M., **Lewis, S.** Identifying Biologically Revelant Cues in the Hydrologic Regime Abstract B23D-0484 presented at 2012 AGU Fall Meeting, AGU, San Francisco, Calif., 3-7 Dec.

Professional Service & Memberships

Faculty Member, Oregon State University Water Resources Graduate Program (since 2014)

Secretary of the Quaternary Geology and Geomorphology Division of Geological Society of America, 2012 – present.

Member GSA (since 1997); AGU (since 2011); AWG (since 2012).

Manuscript reviewer for Hydrological Processes, 2006 – present; Anthropocene 2013 - present