

SEMINAR: PHYSICAL GEOGRAPHY OF OREGON–GEOG 607

Fall 2015 Term, University of Oregon

Course Registration Number: 125765 (4 credits, Pass/No Pass Only for all students)

Seminar: Friday, 1:00pm – 3:50pm, Condon 207

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Instructor Office Hours: Wednesdays 4pm -5pm, Fridays 12pm – 1pm

This seminar will survey modern research on the physical geography of Oregon, and work to place these works into the context of the overall history and spatial patterning of the physical environments of the state. We will have three overarching goals as we review the research.

(1) To put modern Oregon physical geography research into the context of the overall geologic, climatologic, and biologic histories of Oregon.

(2) To connect the history and geography of Oregon's physical environment with modern human-environmental issues, and with the associated areas of knowledge that being actively researched in dealing with these issues.

(3) To explore how narratives of Oregon's physical geography can be communicated to the public in a dynamic audiovisual manner in order to best raise awareness of Oregon's diverse environment, facilitate discussions on environmental issues in the state, and to teach basic physical geography to a broad audience.

REQUIRED READINGS

The required textbook for this class is: Loy et al., 2001, *Atlas of Oregon* (2nd Edition). University of Oregon Press, 301 pp. We will be using this atlas extensively for both its maps and the informational text that accompanies the maps. The Atlas is out of print, but copies will be available for student use during the term. In addition to the Atlas of Oregon, each week will feature discussion on one or more journal articles or related texts, and potentially Oregon Field Guide segments, and these will be distributed to students electronically.

GRADES

This seminar is a Pass/No-Pass Only course. The determination of Pass/No-Pass will be based on the following components: (1) class participation, measured in terms of active engagement with weekly readings and leading discussion in class, (2) a field trip guide term project, developed by a pair or small team of class members, and focusing on a physical geography of Oregon topic. A “Pass” for this course requires satisfactory effort for both of these components.

FIELD TRIPS

This class will have associated field trips in support of both the weekly reading materials. These field trips are not required, but they are strongly encouraged, and early in the term I will be asking students to make a decision on whether they will attend these field trips so that we can make logistical plans. The location and dates for these trips will be negotiated as necessary in the early part of the term and are subject to change. Currently, the first field trip will be a one-day trip to the Mt. Hood area. The second field trip will be a one-day trip within the Willamette Valley. The third trip will be a two-day field excursion (Saturday and Sunday) to the east side of the Cascade Range, including Fort Rock, Silver Lake, Paisley Caves, Hole-in-the-Ground, Lake Abert, Summer Lake (& Hot Springs), amongst other possibilities. Tentative dates are in the schedule below.

TERM PROJECT

Because a large component of this seminar is the subject of communicating complex, large-area geographical knowledge, the term projects will be student-produced field trip guides on a physical geography of Oregon subject.

LATE/MAKE-UP WORK

Late work will not be accepted and make-up work will not be assigned, except in extreme circumstances and where you have documentation (i.e. doctor’s note). If you must miss a project deadline due to illness or other unavoidable circumstances, you **MUST** notify the instructor prior to missing if possible.

DISABILITY SERVICES NOTICE

I work hard to ensure a quality learning experience for all students. If you need specific accommodations to get the most out of this class, please let me know by (1) informing me of your particular needs, and (2) providing the appropriate documentation from the campus learning services office. I will make every effort

to accommodate your needs, but you must notify me by the first week of class if you need special arrangements.

NOTE: I consider this syllabus a contract between myself and the students in this course. In writing this syllabus, I have obligated myself to follow the policies and procedures contained herein. You are responsible for understanding and following these policies as well. I reserve the right to make changes to this syllabus. You will receive verbal and written notification of major changes to course policies, procedures and content.

(VERY) TENTATIVE SCHEDULE

DATE	TOPIC	POSSIBLE DISCUSSED READINGS
2-Oct	Class overview, Geological History of Oregon I	No readings
9-Oct	Geological History of Oregon II	Atlas 188-147 Liu & Stegman, 2012, Nature, 482(7385) Kelsey et al., 2005, GSA Bull, 117(7-8) Oregon: A Geologic History website
16-Oct	Climatology of Oregon	Atlas 154-161 Dugas, 1998, Quat Res., 50(3) Worona & Whitlock, 1995., GSA Bull, 107 Long et al., 1998, Can.Jour.For.Res. 28.
23-Oct	Quaternary Environments of Oregon	Atlas 132 -141 (Review) Peterson et al., 2007, Geomorph, 91(1-2) Hart & Peterson, 2007, ESPL, 32(2) Marcott et al., 2009, Quat. Res., 71(2)
30-Oct	Geomorphology and Hydrology of Oregon	Atlas 162-171 Jefferson et al., 2010, ESPL, 35(7) Luo & Tomasz, 2008, Geomorph, 99(1-4) Personius, 1995, Jour. Geo. Res. 100(B10)
6-Nov	Geomorphology II, and Ecosystems of Oregon	Atlas 172-191 Safran et al., 2011, GSA Bull, 123(9-10) Wemple et al., 2001, ESPL, 26(2) Almond et al., 2007, Jour. Geophy. Res. 112
13-Nov	"East Side" Trip Readings	Brand & Clarke, 2009, Jour. Volc. Geo. Res. 180(2-4) Kuehn & Negrini, 2010, Geosphere, 6(4)
20-Nov	Biogeography and Soils in Oregon	Atlas 148-153 Ohmann & Spies, 1998, Ecol. Mono. 68(2) Wimberly, 2002, Can. Jour. For. Res. 32(8) Jones et al., 2004, Geosci Can., 31(4)
4-Dec	Willamette Riverscape History	Wallick et al. 2013
10-Dec	FINAL PROJECTS DUE, 2:45pm	

Potential Readings

Almond, P., Roering, J.J., Hales, T.C. 2007. Using soil residence time to delineate spatial and temporal patterns of landscape disequilibrium. *Journal of Geophysical Research – Earth Surface*, 112(3), article number F03S17.

Brand, B.D., Clarke, A.B. 2009. The architecture, eruptive history, and evolution of the Table Rock Complex, Oregon: From a Surtseyan to an energetic maar eruption. *Journal of Volcanology and Geothermal Research*, 180(2-4), 203-224.

Carter, D.T., Ely, L.L., O'Connor, J.E., Fenton, C.R. 2006. Late Pleistocene outburst flooding from pluvial Lake Alvord into the Owyhee River, Oregon. *Geomorphology*, 75, 346-367.

Dugas, D.P. 1998. Late Quaternary variations in the level of paleo-Lake Malheur, eastern Oregon. *Quaternary Research* 50(3), 276-282.

Hart, R., Peterson, C.D. 2007. Late-Holocene buried forests on the Oregon coast. *Earth Surface Processes and Landforms*, 32(2), 210-229.

Jefferson, A., Grant, G.E., Lewis, S.L., Lancaster, S.T. 2010. Coevolution of hydrology and topography on a basalt landscape in the Oregon Cascade Range, USA. *Earth Surface Processes and Landforms*, 35(7), 803-816.

Jones, G.V., Snead, N., Nelson, P. 2004. Geology and wine 8. Modeling viticultural landscapes: A GIS analysis of the terroir potential in the Umpqua Valley of Oregon. *Geoscience Canada*, 31(4), 167-178.

Kelsey, H.M., Nelson, A.R., Hemphill-Haley, E., Witter, R.C. 2005. Tsunami history of an Oregon coastal lake reveals a 4600 yr record of great earthquakes on the Cascadia subduction zone. *Geological Society of America Bulletin*, 117(7-8), 1009-1032.

Kuehn, S.C., Negrini, R.M. 2010. A 250 k.y. record of Cascade arc pyroclastic volcanism from late Pleistocene lacustrine sediments near Summer Lake, Oregon, USA. *Gosphere*, 6(4), 397-429.

Liu, L., and Stegman, D.R. 2012. Origin of Columbia River flood basalt controlled by propagating rupture of the Farallon slab. *Nature*, 482(7385), 386-U1508.

Long, C.J., Whitlock, C., Bartlein, P.J., Millsbaugh, S.H. 1998. A 9000-year fire history from the Oregon Coast Range, based on a high-resolution charcoal study. *Canadian Journal of Forest Research* 28, 774-787.

Luo, W., Tomasz, S. 2008. Identification of geologic contrasts from landscape dissection pattern: An application to the Cascade Range, Oregon, USA. *Geomorphology*, 99(1-4), 90-98.

Marcott, S.A., Fountain, A.G., O'Connor, J.E., Sniffen, P.J., Dethier, D.P. 2009. A latest Pleistocene and Holocene glacial history and paleoclimate reconstruction at Three Sisters and Broken Top Volcanoes, Oregon, USA. *Quaternary Research*, 71(2), 181-189.

Ohmann, J.L., Spies, T.A. 1998. Regional gradient analysis and spatial pattern of woody plant communities of Oregon forests. *Ecological Monographs*, 68(2), 151-182.

Oregon: A Geologic History Website:

<http://www.oregongeology.org/sub/publications/ims/ims-028/tectonics.htm>

Personius, S.F. 1995. Late Quaternary stream incision and uplift in the forearc of the Cascadia subduction zone, western Oregon. *Journal of Geophysical Research – Solid Earth*, 100(810), 20193-20210.

Peterson, C.D., Stock, E., Price, D.M. 2007. Ages, distributions, and origins of upland coastal dune sheets in Oregon, USA. *Geomorphology*. 91(1-2),80-102.

Safran, E.B., Anderson, S.W., Mills-Novoa, M., House, P.K., Ely, L.L. 2011. Controls on large landslide distribution and implications for the geomorphic evolution of the southern interior Columbia River basin. *Geological Society of America Bulletin*, 123(9-10), 1851-1862.

Wemple, B.C., Swanson, F.J., Jones, J.A. 2001. Forest roads and geomorphic process interactions, Cascade Range, Oregon. *Earth Surface Processes and Landforms*, 26(2), 191-204.

Wallick, J.R., Jones, K.L., O'Connor, J.E., Keith, M.K. 2013. Geomorphic and vegetation processes of the Willamette River floodplain, Oregon – Current understanding and unanswered questions. USGS Open-File Report 2013-1246. 70 pp.

Wimberly, M.C. 2002. Spatial simulation of historical landscape patterns in coastal forests of the Pacific Northwest. *Canadian Journal of Forest Research*, 32(8), 1316-1328.

Worona, M.A., Whitlock, C.. 1995. Late Quaternary vegetation and climate history near Little Lake, central Coast Range, Oregon. *Geological Society of America Bulletin*, 107 (7), 867-876.