

**Note:** most of these are on <http://eres.sfsu.edu/courseindex.asp>

### **Week 1: Foundations of Geomorphic Systems and Equilibrium**

- Gilbert, G. K. (1877). Report on the geology of the Henry Mountains [Utah]: U.S. Geog. and Geol. Survey of the Rocky Mtn. Region (Powell), 160 p. -- Read Chapter 5, Land Sculpture: pp. 93-144.
- [Davis, W. M. \(1899\)](#). The geographical cycle. *Geogr. J.* 14: 481-504.
- [Hack, J. T. \(1960\)](#). Interpretation of erosional topography in humid temperate regions. *American Journal of Science* 258-A: 80-97.
- [Schumm, S. A., and R. W. Lichty \(1965\)](#). Time, space, and causality in geomorphology. *Am. J. Sci.* 263: 110-119.

### **Optional:**

- von Engel, O. D. (1942). The Walther Penck Geomorphic System. Chapter 13 in *Geomorphology : Systematic and Regional*. New York, Macmillan, pp. 256-267.
- King, L. C. (1953). Canons of landscape evolution. *Geol. Soc. Am. Bulletin* 64: 721-752.
- Phillips, J. D. (1992). The end of equilibrium? *Geomorphology* 5: 195-201.
- Mount, Jeffrey F. (1995). *California Rivers and Streams*. Berkeley, UC Press.  
Chapter 1: "Introduction to the rivers of California: the first 4 billion years"  
Chapter 2: "Water in motion"

**Week 2: Equilibrium Models in Geomorphology**

- [Schumm, S. A. \(1973\)](#). Geomorphic thresholds and complex response of drainage systems. In Morisawa, M., Ed., *Fluvial Geomorphology*. Boston, George Allen & Unwin, 299-310.
- [Scheidegger, Adrian E. \(1983\)](#). Instability principle in geomorphic equilibrium. *Z. Geomorphol.* N.F. Bd 27: 1-19.
- [Graf, W. L. \(1977\)](#). The rate law in fluvial geomorphology. *American Journal of Science* 277: 178-191.
- [Graf, W. L. \(1983\)](#). Downstream changes in stream power in the Henry Mountains, Utah. *Annals of the Association of American Geographers*. 73(3): 373-387.

*Optional:*

- Langbein, W. B., and L. B. Leopold (1964). Quasi-equilibrium states in channel morphology. *American Journal of Science* 262: 782-794.
- Chorley, R. (1962). Geomorphology and general systems theory. *USGS Prof. Paper 500-B*, 10 p.
- Leopold, L. B., and M. G. Wolman (1957). *River Channel Patterns: Braided, Meandering, and Straight*. U.S. Geological Survey Professional Paper 282-B.
- Leopold, L. B., and W. B. Langbein (1962). The concept of entropy in landscape evolution. *USGS Prof. Paper 500-A*. 20 p.
- Leopold, L. B., and T. Maddock (1953). The hydraulic geometry of stream channels & some physiographic implications. *USGS Prof. Paper 252*. 57 p.  
[part 1](#) [part 2](#) [part 3](#)
- Strahler, A. N. (1952). Dynamic basis of geomorphology. *Bulletin of the Geological Society of America* 63: 923-938.
- Mount, Jeffrey F. (1995). *California Rivers and Streams*. Berkeley, UC Press.  
Chapter 3: "A river at work: sediment entrainment, transport, and deposition."  
Chapter 4: "The shape of a river"  
Chapter 5: "Origins of river discharge" (review overland flow if necessary)  
Chapter 7: "River network and profile"  
Chapter 8: "Climate and the rivers of California"  
Chapter 9: "Tectonics and geology of California's rivers"

**Week 3: Geomorphic Response to Agriculture & Grazing**

- [Knox, James C. \(1977\)](#). Human impacts on Wisconsin stream channels. *Annals of the Association of American Geographers* 67(3): 323-342.
- Magilligan, Francis J., and Melissa L. Stamp (1997). Historical land-cover changes and hydrogeomorphic adjustment in a small Georgia watershed. *Annals of the Association of American Geographers* 87(4): 614-635.  
<http://bss.sfsu.edu/jdavis/geog810/documents/refs/Magilligan1997GA.pdf>
- Micheli, E. R., and J. W. Kirchner (2002). Effects of wet meadow riparian vegetation on streambank erosion. 1. Remote sensing measurements of streambank migration and erodibility. *Earth Surface Processes and Landforms* 27: 627-639.  
<http://bss.sfsu.edu/jdavis/geog810/documents/refs/MicheliKirchner1RS-MeadowRiparian.pdf>
- Nagle, Gregory N., and Caty F. Clifton (2003). Channel changes over 12 years on grazed and ungrazed reaches of Wickiup Creek in eastern Oregon. *Physical Geography* 24 (1): 77-95. <http://bss.sfsu.edu/jdavis/geog810/documents/refs/NagleClifton2003.pdf>

**Optional:**

- Micheli, E. R., and J. W. Kirchner (2002). Effects of wet meadow riparian vegetation on streambank erosion. 2. Measurements of vegetated bank strength and consequences for failure mechanics. *Earth Surface Processes and Landforms* 27: 687-697.  
<http://bss.sfsu.edu/jdavis/geog810/documents/refs/MicheliKirchner2field-MeadowRiparian.pdf>
- Woltemade, Christopher J. (1994). Form and process: fluvial geomorphology and flood-flow interaction, Grant River, Wisconsin. *Annals of the Association of American Geographers* 84(3): 462-479.
- Knox, J. C. (1987). Historical valley floor sedimentation in the upper Mississippi Valley. *Annals of the Association of American Geographers* 77: 224-244.
- [Finley, R. J., and T. C. Gustavson \(1983\)](#). Geomorphic effects of a 10-year storm on a small drainage basin in the Texas panhandle. *Earth Surface Processes and Landforms* 8: 63-77.
- Rosgen, David L. (1994). A classification of natural rivers. *Catena* 22: 169-199.
- Mount, Jeffrey F. (1995). *California Rivers and Streams*. (Berkeley: University of California Press). 359 p. Chapters:  
Chapter 6: "Sediment Supply"  
Chapter 13: "Food production and the rivers of California"  
Chapter 10: "Rivers of California: the last 200 years"  
Chapter 17: "The Future: Changing Climate, Changing Rivers"

**Week 4: Geomorphic Response to Forestry and Roads**

- Croke, Jacky, Peter Hairsine, and Peter Fogarty (1999). Sediment transport, redistribution and storage on logged forest hillslopes in south-eastern Australia. *Hydrological Processes* 13: 2705-2720. [download](#)
- Guthrie, R. H. (2002). The effects of logging on frequency and distribution of landslides in three watersheds on Vancouver Island, British Columbia. *Geomorphology* 43: 273-292. [download](#)
- [Reid, L. M., and T. Dunne \(1984\)](#). Sediment production from forest road surfaces. *Water Resources Research* 20: 1753-1761.
- Nyssen, Jan, Jean Poesen, Jan Moeyersons, Edith Luyten, Maude Veyret-Picot, Jozef Deckers, Mitiku Haile, Gerard Govers (2002). Impact of road building on gully erosion risk: a case study from the northern Ethiopian highlands. *Earth Surface Processes and Landforms* 27: 1267-1283. [download](#)

**Optional:**

- [Dunne, Thomas \(1980\)](#). Formation and controls of channel networks. *Progress in Physical Geography* 4: 211-239.
- Dunne, Thomas (1998). Critical data requirements for prediction of erosion and sedimentation in mountain drainage basins. *Journal of the American Water Resources Association*. 34(4): 795-808.
- Gomi, Takashi, Roy C. Sidle, Richard D. Woodsmith, and Mason D. Bryant (2003). Characteristics of channel steps and reach morphology in headwater streams, southeast Alaska. *Geomorphology* 51: 225-242. [download](#)
- Heede, B. H. (1985). Application of geomorphological concepts to evaluate timber harvest influences on a stream channel -- a case study. *Zeitschrift fur Geomorphologie Suppl-Bd.* 55: 121-130.
- Vanacker, Verrle, Michiel Vanderschaeghe, Gerard Govers, Edith Willems, Jean Poesen, Jozef Deckers, and Bert De Bievre (2002). Linking hydrological, infinite slope stability and land-use change models through GIS for assessing the impact of deforestation on slope stability in high Andean watersheds. *Geomorphology* (in press), 17 pp. [download](#)
- Wright, K. A., K. H. Sendek, R. M. Rice, and R. B. Thomas (1992). Logging effects on streamflow-storm runoff at Caspar Creek in northwestern California. *Water Resources Research* 26: 1657-1667.
- Mount, Jeffrey F. (1995). *California Rivers and Streams*. (Berkeley: University of California Press). 359 p. Chapters: Chapter 8: "Climate and the rivers of California"; Chapter 9: "Tectonics and geology of California's rivers"
- Mount, Jeffrey F. (1995). *California Rivers and Streams*. (Berkeley: University of California Press). 359 p. Chapters: Chapter 12. "Logging California's Watersheds"

**Week 5: Geomorphic Response to Dams & Dam Removal; Recreational Use**

- [Andrews, E. D. \(1986\)](#). Downstream effects of Flaming Gorge Reservoir on the Green River, Colorado and Utah. *Geol. Soc. Am. Bulletin* 97: 1021-1023.
- [Kondolf, G. M., and M. L. Swanson \(1993\)](#). Channel adjustments to reservoir construction and gravel extraction along Stony Creek. *Environmental Geology* 21: 256-269.
- Doyle, Martin W., Emily H. Stanley, and Jon M. Harbor (2003). Channel adjustments following two dam removals in Wisconsin. *Water Resources Research* 39(1): 1011. 15 p. [download](#)
- [Madej, Mary Ann, William E. Weaver, and Danny K. Hagans \(1994\)](#). Analysis of bank erosion on the Merced River, Yosemite Valley, Yosemite National Park, California, USA. *Environmental Management* 18 (2): 235-250.

**Optional:**

- Mount, Jeffrey F. (1995). *California Rivers and Streams*. (Berkeley: University of California Press). 359 p.  
Chapter 14: "A primer on flood frequency"  
Chapter 16: "The damming of California's rivers"
- Rhoads, B. L. (1990). The impact of stream channelization on the geomorphic stability of an arid-region river. *National Geographic Research* 6: 157-177.
- Xu, J. X. (1990). An experimental study of complex response in river channel adjustment downstream from a reservoir. *Earth Surface Processes and Landforms* 15: 43-53.
- Simon, Andrew (1992). Energy, time, and channel evolution in catastrophically disturbed fluvial systems. *Geomorphology* 5: 345-372.
- Simon, Andrew (1989). A model of channel response in disturbed alluvial channels. *Earth Surface Processes and Landforms* 14: 11-26.
- Brookes, Andrew (1988). *Channelized Rivers: Perspectives for Environmental Management*. John Wiley & Sons, Chichester.
- Madej, Mary Ann (1999). Temporal and spatial variability in thalweg profiles of a gravel-bed river. *Earth Surface Processes and Landforms* 24: 1153-1169. [download](#)
- Florsheim, Joan L., and Jeffrey F. Mount (2002). Restoration of floodplain topography by sand-splay complex formation in response to intentional levee breaches, lower Cosumnes River, California. *Geomorphology* 44: 67-94. [download](#)

**Week 6: Biogeomorphology**

- [Harris, Richard \(1988\)](#). Associations between stream channel geomorphology and riparian vegetation as a basis for landscape analysis in the eastern Sierra Nevada, California, USA. *Environmental Management* 12(2): 219-228.
- Graf, W. L. (1996). Geomorphology and policy for restoration of impounded American rivers: What is 'Natural'? Chapter 18 in Rhoads, B. L., and C. E. Thorn, eds., *The Scientific Nature of Geomorphology*. (Proceedings of the 27th Binghamton Symposium in Geomorphology held 27-29 September 1996. John Wiley & Sons) pp. 443-473. Source: <https://netfiles.uiuc.edu/brhoads/www/book.htm>
- Trimble, S. W. (1997). Stream channel erosion and change resulting from riparian forests. *Geology* 25(5): 467-469. <http://bss.sfsu.edu/jdavis/geog810/documents/refs/Trimble1997.pdf>
- Poole, Geoffrey C., Jack A. Stanford, Christopher A. Frissell, Steven W. Running (2002). Three-dimensional mapping of geomorphic controls on flood-plain hydrology and connectivity from aerial photos. *Geomorphology* 48: 329-347. <http://bss.sfsu.edu/jdavis/geog810/documents/refs/Pooleetal2002.pdf>

## Optional:

- Rosgen, David (1994). A classification of natural rivers. *Catena* 22: 169-199. [Download the PDF.](#)
- Montgomery, D. R., J. M. Buffington (1997). Channel-reach morphology in mountain drainage basins. *GSA Bulletin*. 109(5): 596-611. [download](#) (also see [eRes](#) for another article by these two, with more complete statement of this classification system)
- Hupp, C. R., and W. R. Osterkamp (1996). Riparian vegetation and fluvial geomorphic processes. *Geomorphology* 14: 277-295. [download](#)
- Castro, Janine (2003). Geomorphologic impacts of culvert replacement and removal: avoiding channel incision. USFWS -- Oregon Fish and Wildlife Office, Portland, OR. [Download.](#)
- Brooks, Andrew P., and Gary J. Brierley (2002). Mediated equilibrium: the influence of riparian vegetation and wood on the long-term evolution and behaviour of a near-pristine river. *Earth Surface Processes and Landforms* 27: 343-367.
- Bendix, Jacob, and Cliff R. Hupp (2000). Hydrological and geomorphological impacts on riparian plant communities. *Hydrological Processes* 14: 2977-2990.
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## **Week 7: Geomorphic Response to Urbanization**

- [Wolman \(1967\)](#). A cycle of sedimentation and erosion in urban river channels. *Geografiska Annaler* 49A: 385-395.
- [Leopold, Luna B. \(1973\)](#). River change with time – an example. *Bulletin Geological Society of America* 84: 1845-1860.

### **Optional:**

- [Booth, Derek B \(1990\)](#). Stream-channel incision following drainage-basin urbanization. *Water Resources Bulletin* 26 (3): 407-417.
- [Ebisemiju, Fola S. \(1989\)](#). The response of headwater stream channels to urbanization in the humid tropics. *Hydrological Processes* 3: 237-253.
- [Gregory, K. J., R. J. Davis and P. W. Downs \(1992\)](#). Identification of river channel change due to urbanization. *Applied Geography* 12: 299-318.
- Neller, R. J. (1988). A comparison of channel erosion in small urban and rural catchments, Armidale, New South Wales. *Earth Surface Processes and Landforms* 13: 1-7.
- Mount, Jeffrey F. (1995). *California Rivers and Streams*. (Berkeley: University of California Press). 359 p. Chapters:  
Chapter 15: "The urbanization of California's rivers"
- Leopold (1968). Hydrology for urban land planning – a guidebook on the hydrologic effects of urban land use. USGS Circular 554.
- Morisawa, Marie, and Ernest LaFlure (1979). Hydraulic geometry, stream equilibrium and urbanization. In Rhodes, Dallas D., and Garnett P. Williams, eds., *Adjustments of the fluvial system (10th Geomorphology Symposium, Binghamton, NY)*. (Dubuque, Ia: Kendall/Hunt). Pp. 333-350

## Hydraulic Mining Field Trip Preparation

- James, L. A. (1995). Diversion of the upper Bear River: Glacial diffuence and Quaternary erosion, Sierra Nevada, California. *Geomorphology* 14: 131-148. [download](#)
- James, L. A. (1999). Time and persistence of alluvium: River engineering, fluvial geomorphology, and mining sediment in California. *Geomorphology* 31: 265-290. [download](#)
- Mount, Jeffrey F. (1995). *California Rivers and Streams*. (Berkeley: University of California Press). 359 p. Chapters:  
Chapter 11. "Mining and the Rivers in California"

### **Optional:**

- James, L. Allan (1993). Sustained reworking of hydraulic mining sediment in California: G. K. Gilbert's sediment wave model reconsidered. *Z. Geomorph. N. F. Suppl.-Bd.* 88: 49-66.
- [James, L. A. \(1989\)](#). Sustained storage and transport of hydraulic gold mining sediment in the Bear River, California. *Annals of the Association of American Geographers* 79: 570-592. (in week7 of eres)
- Knighton, A. D. (1989). River adjustment to changes in sediment load: the effects of tin mining on the Ringarooma River, Tasmania, 1875-1984. *Earth Surface Processes and Landforms* 14: 333-359.
- Kondolf, G. Mathias (1994). Geomorphic and environmental effects of instream gravel mining. *Landscape and Urban Planning* 28: 225-243.

## Other Topics

### Erosion Rates from Uplift and Mass Wasting

- Benda, Lee, and Thomas Dunne (1997). Stochastic forcing of sediment supply to channel networks from landsliding and debris flow. *Water Resources Research* 33(12): 2849-2863.
- Dunne, Thomas (1998). Critical data requirements for prediction of erosion and sedimentation in mountain drainage basins. *J. Am. Water Res. Assoc.* 34(4): 795-808.
- [Reneau, S. L., and W. E. Dietrich \(1991\)](#). Erosion rates in the southern Oregon coast range: evidence for an equilibrium between hillslope erosion and sediment yield. *Earth Surface Processes and Landforms* 16: 307-322.
- Douglas, Ian (1988). Restrictions on hillslope modelling. Ch. 14 in *Modelling Geomorphological Systems*, M.G. Anderson, ed. (Chichester: John Wiley.) 401-420.
- Merritts, D., and K. R. Vincent (1989). Geomorphic response of coastal streams to low, intermediate, and high rates of uplift, Mendocino triple junction region, northern California. *Geological Society of America Bulletin* 101: 1373-1388.

**Group-assigned readings**

- Group 2 (discussion 10 April, 2003)
  - [Marcus, Laurel \(2000\). Restoring tidal wetlands at Sonoma Baylands, San Francisco Bay, California. \*Ecological Engineering\* 15 \(2000\) 373–383.](#) [assigned by Jim Pettigrew]
  - [Nilsen, Tor H. \(1986\). Relative slope-stability mapping and land-use planning in the San Francisco Bay region, California. In Abrahams, A.D., Ed., \*Hillslope Processes \(The Binghamton Symposia in Geomorphology, International Series, No. 16\).\*](#) [assigned by Stephanie Sims]
  - [Lascelles, Bruce, Favis-Mortlock, David T., Parsons, Anthony J., and Guerra, Antonio J. T. \(2000\). Spatial and Temporal Variation in Two Rainfall Simulators: Implications for Spatially Explicit Rainfall Simulation Experiments. \*Earth Surface Processes and Landforms\* 25: 709-721.](#) [assigned by Dion Good]
- Group 3 (discussion 24 April 2003)
  - [Edinger, E. N., Limmon, G. V., Jompa, J., Widjatmoko, W., Jompa, J., Widjatmoko, W., Heikoop, J., and Risk, M. J. \(2000\). Normal Coral Growth Rates on Dying Reefs: Are Coral Growth Rates Good Indicators of Reef Health? \*Marine Pollution Bulletin\* 40, No. 5, pp. 404-425.](#) [assigned by Kristin Bowman]
  - [Clague, John J., Stephen G. Evans \(2000\). A review of catastrophic drainage of moraine-dammed lakes in British Columbia. \*Quaternary Science Reviews\* 19 \(2000\) 1763-1783.](#) [assigned by Aaron Mount]
  - [Mando, A., L. Stroosnijder, L. Brussaard \(1996\). Effects of termites on infiltration into crusted soil. \*Geoderma\* 74: 107-113.](#) [assigned by Suzanne Holquin]
  - [Granger, Darryl E., Derek Fabel, Arthur Palmer \(2001\). Pliocene-Pleistocene incision of the Green River, Kentucky, determined from radioactive decay of cosmogenic <sup>26</sup>Al and <sup>10</sup>Be in Mammoth Cave sediments. \*Geological Society of America Bulletin\* 113 \(7\): 825-836.](#) [assigned by Sean Stasio]