Suggested Readings/References

The Suggested Readings/References for Environmental Geology offer the reader further resources. Some of the items are references used directly in the chapter in question. Some are references to a broader range of material relevant to the chapter. Some present additional case studies, different perspectives on chapter material, or additional issues that arise in connection with the subject of the chapter. The majority have been selected purposely to be appropriate to a nonspecialist audience (such as a student in an introductory college course in geology!), with a few more technical/advanced items included here and there for the interested reader.

Just use the bookmarks bar (see icon at upper right) to go to the readings for a particular chapter.

Section One  Foundations
   Chapter 1  Planet and Population: An Overview
   Chapter 2  Rocks and Minerals -- A First Look
Section Two  Internal Processes
   Chapter 3  Plate Tectonics
   Chapter 4  Earthquakes
   Chapter 5  Volcanoes
Section Three  Surface Processes
   Chapter 6  Streams and Flooding
   Chapter 7  Coastal Zones and Processes
   Chapter 8  Mass Movements
   Chapter 9  Ice and Glaciers, Wind and Deserts
   Chapter 10  Climate -- Past, Present, and Future
Section Four  Resources
   Chapter 11  Groundwater and Water Resources
   Chapter 12  Weathering, Erosion, and Soil Resources
   Chapter 13  Mineral and Rock Resources
   Chapter 14  Energy Resources -- Fossil Fuels
   Chapter 15  Energy Resources -- Alternative Sources
Section Five  Waste Disposal, Pollution, and Health
   Chapter 16  Waste Disposal
   Chapter 17  Water Pollution
   Chapter 18  Air Pollution
Section Six  Other Related Topics
   Chapter 19  Environmental Law and Policy
   Chapter 20  Land-Use Planning and Engineering Geology
Appendix A  Geologic Time, Geologic Process Rates


Geochemical Society. 2006. In the August 2006 issue of *Elements*, the society’s journal, there are several short articles on aspects of the early earth, including:

- Koeberl, C. Impact processes on the early Earth (211–16).
- Schopf, J. W. The first billion years: When did life emerge? (229–33).
- Valley, J. W. Early Earth (201–4).
- Zahnle, K. J. Earth’s earliest atmosphere (217–22).


Roberts, L. 2011. 9 billion? Science 333 (29 July): 540-43. (This is a collection of data and diagrams collected from various sources, all relating to population growth and distribution.)


Van der Vink, G.E., et al. 2007 Democracy, GDP, and natural disasters. Geotimes (October): 36-39. (Note: This publication has more recently been renamed Earth.)


Chapter 2 Suggested Readings/References


Chapter 3 Suggested Readings/References


Chapter 4 Suggested Readings/References


Burns, S. 2011. After 8,000 aftershocks: When will it stop? *Earth* (December): 38-40. (Relates to the Christchurch, NZ earthquake.)


Kolbert, E. 2015. Aftershock. *Smithsonian* (June): 36-43. (Deals with the I'Aquila earthquake trial.)


Southern California Earthquake Center. 2006. *Putting down roots in earthquake country.* (A comprehensive guide to earthquakes and earthquake preparedness. See also their online “resource mine” : [www.earthquakecountry.info](http://www.earthquakecountry.info)).


Stone, R. 2009. Peril in the Pamirs. *Science* 326 (18 December): 1614-17. (Concerns a growing lake, created when a 1911 earthquake caused a landslide that blocked a mountain river, which might cause catastrophic flooding if another earthquake destroys the landslide "dam").


U.S. Geological Survey Staff. 1990. The Loma Prieta, California, earthquake: An


----------. 2010. Scientific drilling into the San Andreas fault zone. *EOS* 91 (1 June): 197-199
Chapter 5 Suggested Readings/References


Geochemical Society. 2008. The February issue of the journal *Elements* includes a series of articles on supervolcanoes:

Miller, C. F., and Wark, D. A. Supervolcanoes and their explosive supereruptions. 11–16.
Bachmann, O. and Bergautz, G. The magma reservoirs that feed supereruptions. 17–21.
Wilson, C. J. N. Supereruptions and supervolcanoes: Processes and products. 29–34.
Self, S. and Blake, S. Consequences of explosive supereruptions. 41–46.


Huang, H., et al. 2015. The Yellowstone magmatic system from the mantle plume to the upper crust. Science 348 (May): 773-76.


Chapter 6 Suggested Readings/References


Larson, D. W. 2012. Runaway Devils Lake. American Scientist 100 (January-February): 46-53. (Concerns a lake in North Dakota in a basin from which no streams drain out; recent increases in percipitation are causing the lake to grow, flooding its surroundings, with no end in sight.)


The February 2014 issue of *Earth* contains several articles relating to the 2013 flooding in Colorado:

Cook, T. Disaster strikes along Colorado's Front Range. (pp. 24-28).

--------- 2013 Front Range flooding: an ecological perspective. (35-41)

Plumlee, G. When water, gravity, and geology collide (29-34)
Chapter 7 Suggested Readings/References


Chapter 8 Suggested Readings/References


-------- . 2014. The Oso landslide shows need for insurance and better planning. *Geotimes* (July/August): 10-11.


avalanches" and "Subsidence." )


(See also the NetNotes for this chapter for links to many online USGS publications on landslides.)
Chapter 9 Suggested Readings/References


Chapter 10 Suggested Readings/References

(Note: The following articles represent a very limited sampling of a very rich literature on this topic!)


Momentous changes at the poles. 2007. Science 315 (16 March): 1513-40. (A series of articles in a special section of the journal.)

Once and future climate change. 2013. Science 341 (2 August): 473-524. (A series of articles in a special section on this subject.)


Hebert, D. 2010. Impossible odds, irresponsible hope: Pakistan’s water woes and the science that can solve them. *Earth* (October): 36-45.


Oleson, T. Virtual water. Earth (September/October): 74-83. (Discusses the "hidden" water consumption behind manufactured goods and resource use.)

Parker, L. 2016. To the last drop. National Geographic (August): 86-111. (Concerns the Ogallala aquifer.)


Song, L. 2010. Rethinking water management. Earth (January): 36-45,


Szabo, Z., Fischer, J.M., and Hancock, T.C. 2012. Principal aquifers can contribute radium to sources of drinking water under certain geochemical conditions. USGS Fact Sheet 2010-3113.


Schultz, H. D., and Hadeler, A., eds. 2003. *Geochemical processes in soil and ground*
water. New York: John Wiley & Sons, Inc.


Chapter 13 Suggested Readings/References


Pratt, S.E. 2011. All that glitters... *Earth* (October): 30-37. (Deals with problems of acid mine drainage associated with gold mines in south Africa.)


Chapter 14 Suggested Readings/References


Bourne, J. K., Jr. 2010. The deep dilemma. *National Geographic* (October): 40-58.(Relates to oil drilling in the Gulf of Mexico.)


10. **2010 updated assessment of undiscovered oil and gas resources of the National Petroleum Reserve in Alaska (NPRA).** USGS Fact Sheet 2010-3102.


Chapter 15 Suggested Readings/References


Murakami, T., and Ewing, R.C., eds. 2012. Fukushima Daiichi. Elements (June). This is a special issue devoted to the Fukushima disaster. Some relevant articles:
  Blandford, E.D. and Ahn, J. Examining the nuclear accident at Fukushima Daiichi. (pp. 189-94)
  Grambow, B., and Poinssot, C. Interactions between nucler fuel and water at the Fukushima Daiichi reactors. (213-19)
  Masumoto, Y, et al. Oceanic dispersion simulations of 137Cs released from the Fukushima Daiichi nuclear power plant. (207-12)
  Mathieu, A., et al. Atmospheric dispersion and deposition of radionuclides from the Fukushima Daiichi nuclear power plant. (195-200)
  Yoshida, N., and Takahashi, Y. Land-surface contamination by radionuclides from the Fukushima Daiichi nuclear power plant accident. (201-06)


Chapter 16 Suggested Readings/References


U.S Geological Survey. 2001. Obsolete computers: gold mine or high-tech trash? USGS Fact Sheet 060-01; also online at pubs.usgs.gov/fs/fs060-01/


The August 2016 issue of Elements contains a number of articles pertaining to geological disposal of radioactive waste, including:

- Grambow, B. Geological disposal of radioactive waste in clay. (239-45)
- Hedin, A., and Olsson, O. Crystalline rock as a repository for Swedish spent nuclear fuel. (247-52)
- Laverov, N.P., et al. The Russian strategy of using crystalline rock as a repository for nuclear waste. (253-56)
- Metlay, D.S. Selecting a site for a radioactive waste repository: A historical analysis. (269-74)
- Swift, P.N., and Bonano, E.J. Geological disposal of nuclear waste in tuff: Yucca Mountain (USA). (263-68)
- von Berlepsch, T., and Haverkamp, B. Salt as a host rock for the geological repository for nuclear waste. (257-62)
Chapter 17 Suggested Readings/References


Pratt, S.E. 2011. All that glitters...Acid mine drainage: The toxic legacy of gold mining in South Africa. *Earth* (October): 30-37.


Chapter 18 Suggested Readings/References


2010. GLORIA sidescan-sonar imagery for parts of the U.S Exclusive Economic Zone and 
adjacent areas. USGS Open-File Report 2010-1332. [online]  


1269-71.

Stokstad, E. 2009. Putting chemicals on a path to better risk assessment. Science 325 (7  
August):694-95.

(16 December): 1362-63.


144-45.


Hapgood, F. 2004. The underground cutting edge. *Invention and Technology* (Fall): 42–48. (Describes high-tech tunnel excavation.)


(Describes a plan to excavate a new canal with nuclear explosions.)


Pattison, K. 1998. Why did the dam burst? *Invention and Technology* (Summer): 22–31. (Describes the St. Francis Dam story, including modern re-analysis of the causes of failure.)


Appendix A Suggested Readings/References


Hurley, P.M. 1959. *How old is the Earth?* Garden City, NY: Doubleday. (This is a classic work tracing the early development of geochronology.)


*These are both advanced textbooks but would be excellent references for students wanting to dig more deeply into the science of geochronology and isotope geology.