



New Features You'll See in *Natural Disasters, 11e*

Title: Natural Disasters, 11e

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New to This Edition —

Many of the Tables and Figures have been updated and more than 50 new ones have been added.

- 1 **Chapter 1:** Extensive updating of all disaster and demographic data.
- 2 **Chapter 2:** New maps of earthquake epicenters and ocean-floor ages. Expanded coverage of plumes versus hot spots.
- 3 **Chapter 3:** New figures on seismic-wave velocity and amplitude; house building-code updates, 1971 versus 2017.
- 4 **Chapter 4:** Expanded text on earthquake swarms. New scenario earthquakes for Hayward fault magnitudes and expected deaths.
- 5 **Chapter 5:** Expanded text on short-term earthquake predictions and alerts (ShakeAlert) and Canada; animal behavior; wastewater-pumping trigger of earthquakes; Virginia earthquake. Update on L'Aquila earthquake trials of scientists.

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- 6 Chapter 6:** Significant rewriting; opening compares Kilauea versus Fuego; fractional crystallization; melting of basalt rock; external water and explosions; Yellowstone future eruptions.
- 7 Chapter 7:** Added pyroclastic eruption of Eyjafjallajokull and jokulhlaup in 2010; viscous magma stored as crystal mush too cool to erupt.
- 8 Chapter 8:** Fukushima Daiichi radioactivity clean up five years later; new photo of tsunami chasing tourists out of the ocean.
- 9 Chapter 9:** Expanded discussions of convection and conduction; vertical air motions; new line art on wind origin.
- 10 Chapter 10:** Updated billion-dollar weather disasters; new figure on 2016 weather fatalities.
- 11 Chapter 11:** New sections on U.S. hurricanes 2006-2017, eyewall replacement cycle, Hurricane Harvey and inland flooding; updated tables and Accumulated Cyclone Energy; new figures on hurricane return periods, Atlantic Multi-decadal Variability. Several new figures.
- 12 Chapter 12:** Significant new updates and additions: Arctic amplification of global warming; Arctic sea-ice volume 1979-2017; global map of climate tipping points; expanded history of knowledge of carbon-dioxide effect on climate including early computer model; Yellowstone eruption of 631 kya and its effect on climate; expanded discussion of orbital forcing, eccentricity, and tilt effects; Athabasca glacier.
- 13 Chapter 13:** New sections on atmospheric rivers, Managed Retreat of buildings from floodplains, Great Mississippi River flood of 1927.
- 14 Chapter 14:** Major Reorganization. Added new sections: Fort McMurray, Canada firestorm; fire weather and winds with spotting, pyrocumulus clouds, mega-fires; smoke effects on human health. Added In Greater Depth on origin of fire on Earth as we know it. Deleted some old tables and figures.
- 15 Chapter 15:** Added new 4-page section on Landslide Mitigation, including 5 new photos. New text analogy of snow avalanche and earthquake-fault movements.
- 16 Chapter 16:** Added new sections: sand, a Tragedy of the Commons; submarine canyons and effect on beach sand; tidal waves up Amazon River. Expanded text: coral reefs and coastline protection.
- 17 Chapter 17:** Added new sections on coronal mass ejections; new collection sites for micrometeorites. Added In Greater Depth on insights from spacecraft landing on a comet. Expanded dwarf planet coverage. Added images of tektites and Moon impact crater.
- 18 Chapter 18:** GREAT NEWS. The chapter on mass extinctions has returned to the print edition of the book.