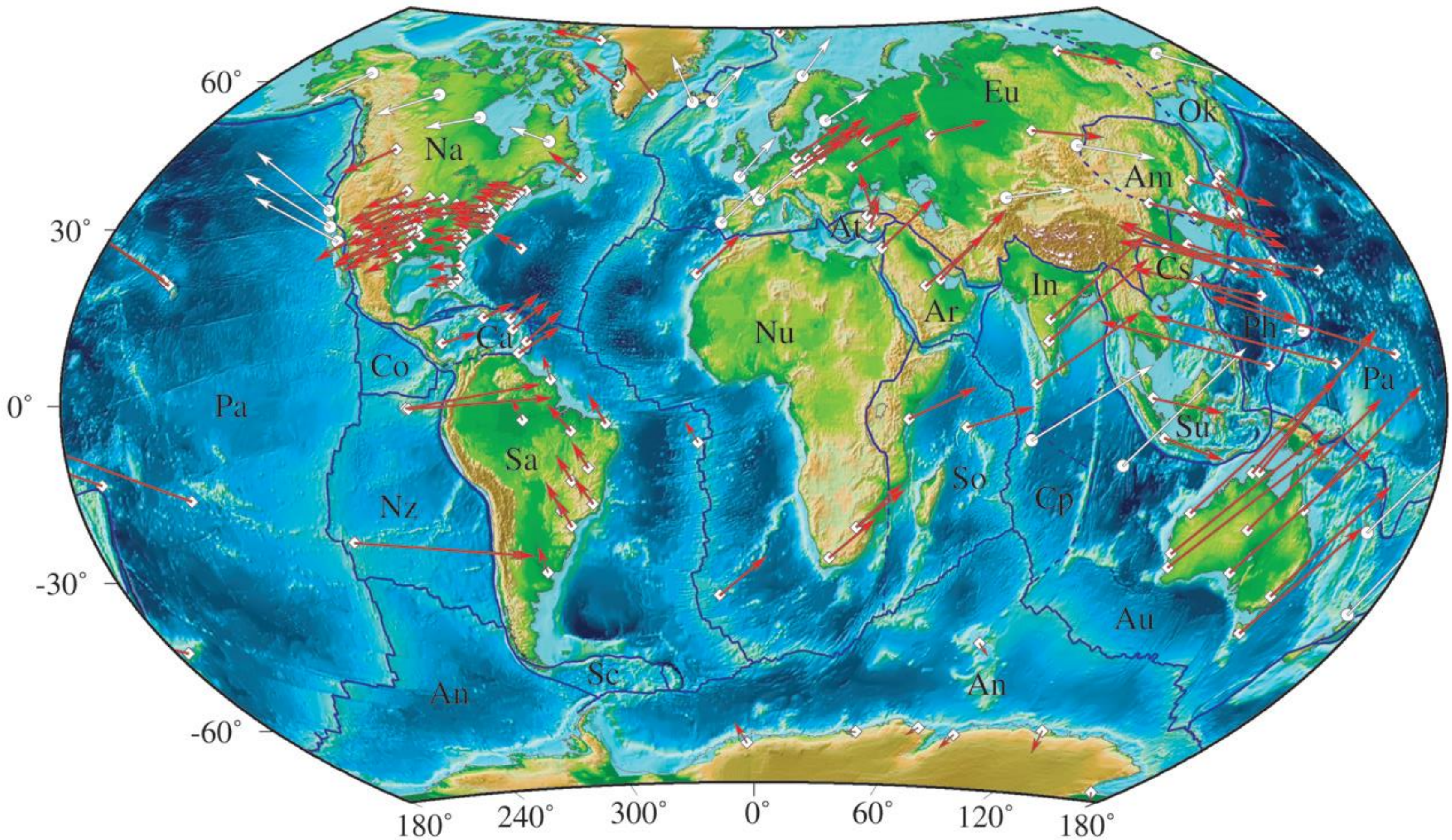
Color Figures for “Curbing Catastrophe”

To reduce costs for the buyer, all figures in the print version of the book are reproduced in black and white or grey tone. Some of those figures were originally in color. The original color version of those figures is shown here.

REVEL-2000



60°
30°
0°
-30°
-60°
180°
240°
300°
0°
60°
120°
180°
Na
Pa
Co
Ca
Sa
Nz
An
Sc
Nu
At
Ar
Eu
Ok
Am
In
Cs
Ph
Pa
Su
So
Cp
Au
An
Rigid plate site
30 mm/yr
Non-rigid plate site
30 mm/yr
Velocities are with respect to ITRF-97

Figure 2.2. The Earth's major plates and their motions, based on the REVEL model (for REcent plate VELocity). The arrows show the direction of plate movement, and their length indicates speed. Plates that have significant continental crust include the Eurasian plate (Eu), the North American plate (Na) and the South American plate (Sa). The Pacific (Pa), Cocos (Co) and Nazca (Nz) plates are mainly formed of oceanic crust and lithosphere. From *Sella et al.* [2002].

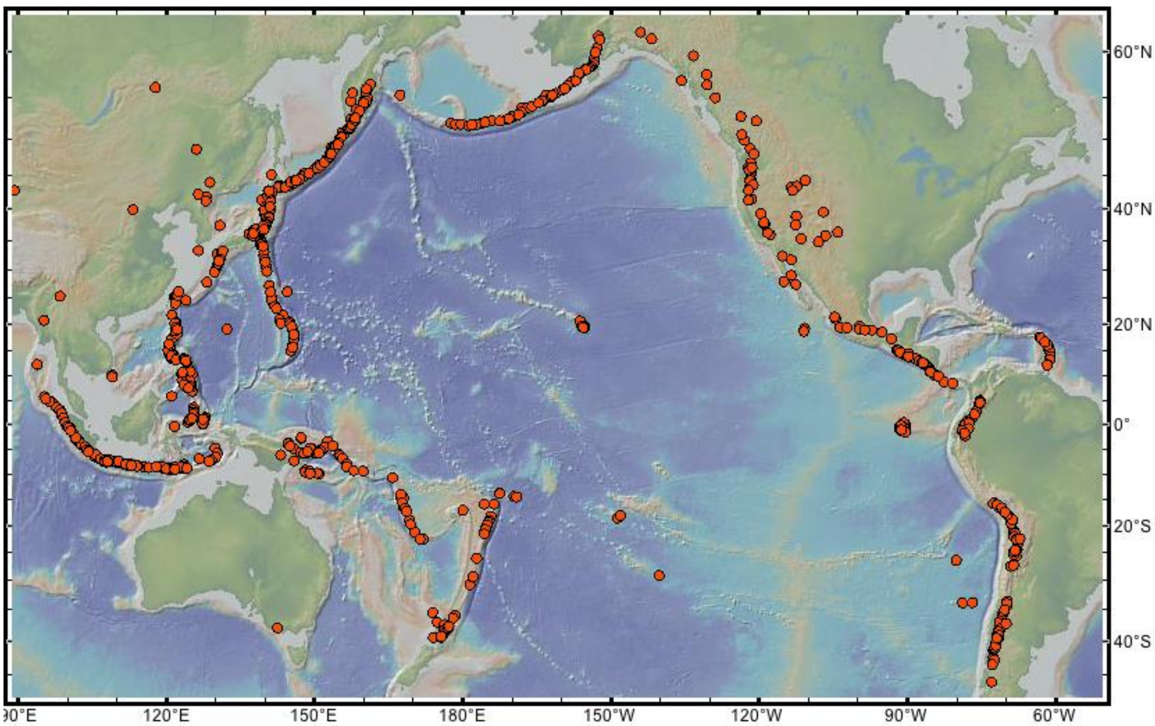


Figure 2.3. The Pacific Ring of Fire. Many of the world's active volcanoes (shown here with small red circles) lie on or near the Pacific Rim, hence the name "ring of fire". A map of the world's major earthquakes would look similar. These volcanoes and earthquakes are a consequence of the geological process of subduction, which also causes Earth's deep ocean trenches (Figure 2.4). Figure made with GeoMapApp.

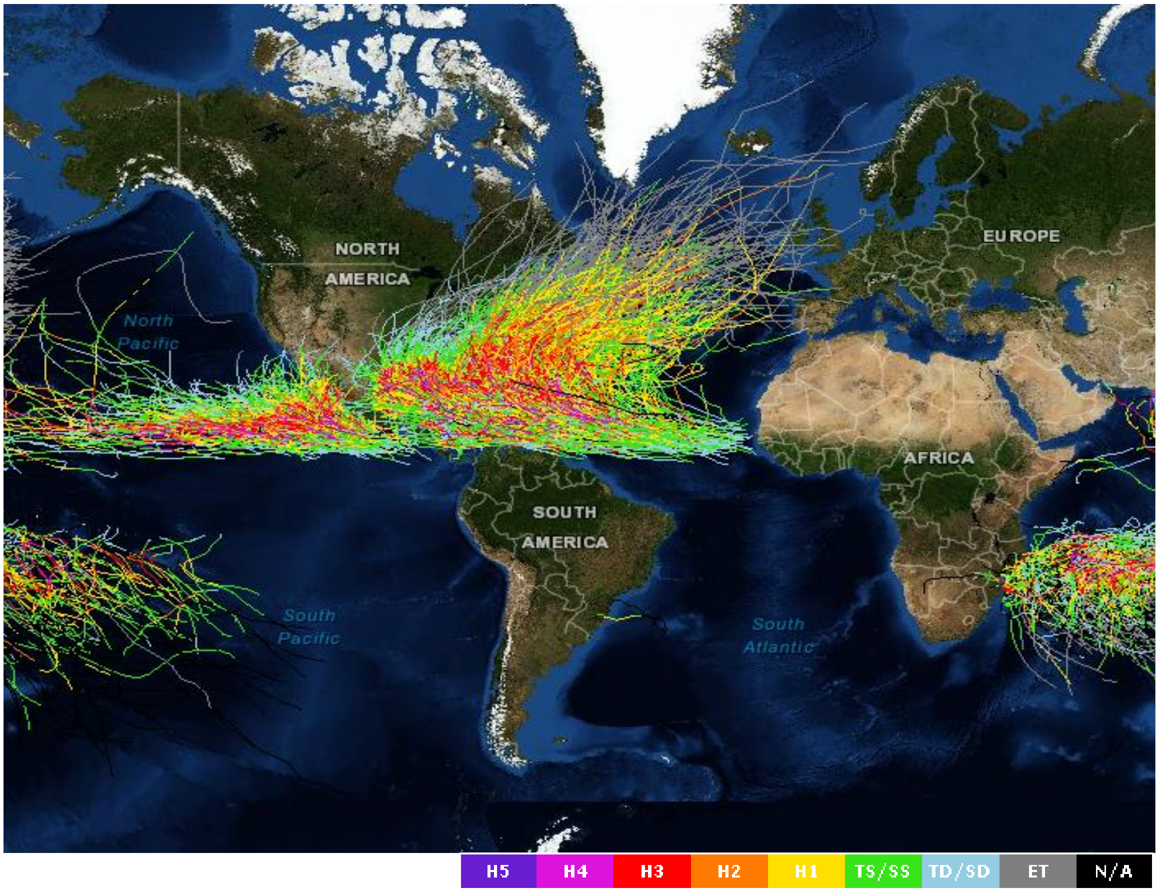


Figure 2.6. Hurricane tracks in or near the western Atlantic basin in the last 150 years. Note the large number of tracks in the Caribbean Basin, Gulf of Mexico, and along the eastern seaboard of the US and southeastern Canada. Data courtesy of NOAA.

Figure 4.2. Tsunami stones – historical evidence for large tsunamis in northeastern Japan. The run-up heights of tsunamis of 1896 (Sanriku earthquake) and 869 (Jogan earthquake) may be marked by these stones. The stone engraving says "Do not build your homes below this point." Photograph by Ko Sasaki, reprinted courtesy New York Times/Redux.

Figure 5.3. An early advertisement for the Orient Express.

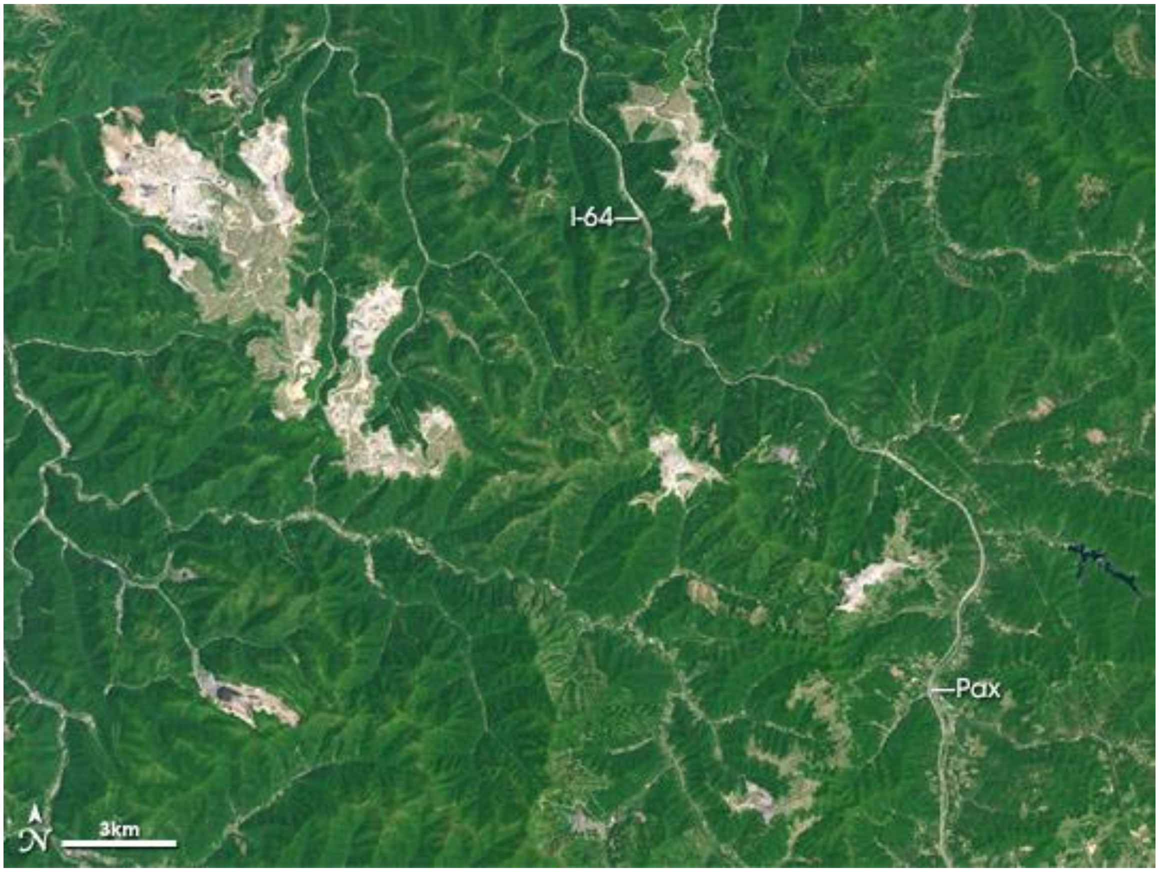


Figure 6.1. A strip-mined area in West Virginia in 2002. Darker areas are forest-covered, lighter areas have been strip-mined for coal. Image courtesy of Robert Simmon and Jesse Allen, based on Landsat satellite data provided by NASA's Global Land Cover Facility and the NASA Earth Observatory.

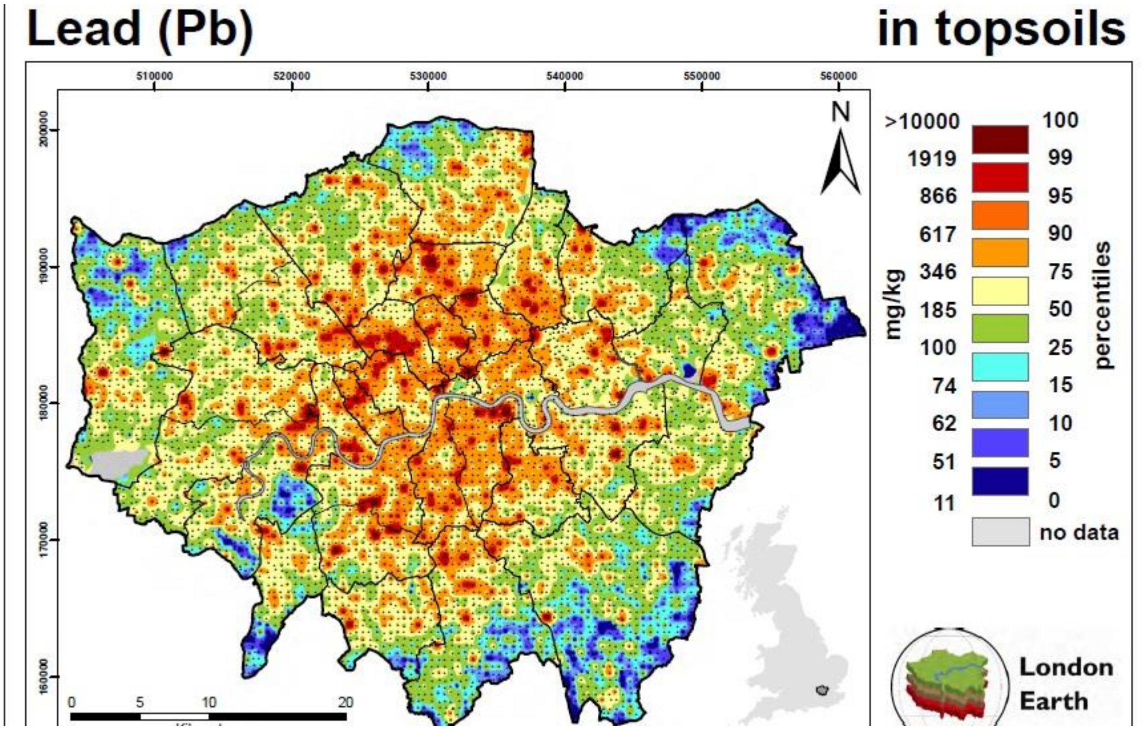


Figure 6.2. Lead in topsoil in London, England, measured by the British Geological Survey in 2008-2009. The scale bar on the right is in units of milligrams (mg) of Lead per kilogram (kg) of soil. Levels above 100 mg/kg are generally considered unsafe, although the Dutch government sets a standard of 40mg/kg. Note that most of central London exceeds even the higher value. Most major urban centers show similar levels of Lead contamination in their topsoil. Figure courtesy of British Geological Survey.

Figure 7.3. A delta house, with the main living space on the second floor. Photo by the author, taken March 2016.

Figure 7.7. Three pictures of sunny-day flooding in Miami Beach. Courtesy Miami-Dade DERM and Q. Yang.

Figure 8.9. The edge of the iceberg mélange near Illulisat, probably marking the underwater location of an end-moraine, a ridge of gravel and rock representing the glacier's farthest advance thousands of year ago.

Figure 8.10a. The calving front at Jakobshavn Isbrae during summer, 2012. An instrument for measuring ice velocity is visible in the foreground, along with a small tent to shelter the operators (the author and graduate student Denis Voytenko) from the wind. The arcuate ice front is approximately 150 meters high, and its center is 5 km away, near the upper right hand side of this photo. The Greenland ice sheet is in the background and to the right of the ice front. Jakobshavn's ice-filled fjord is at the center-left, below the front. Ice motion is mainly from right to left. Photo by the author.

8.10b. A close-up of the calving front, taken near local midnight. The boundary (calving front) between the higher elevation glacier (right hand side) and lower elevation ice-chocked fjord (left hand side) is more apparent when the sun is low on the horizon.

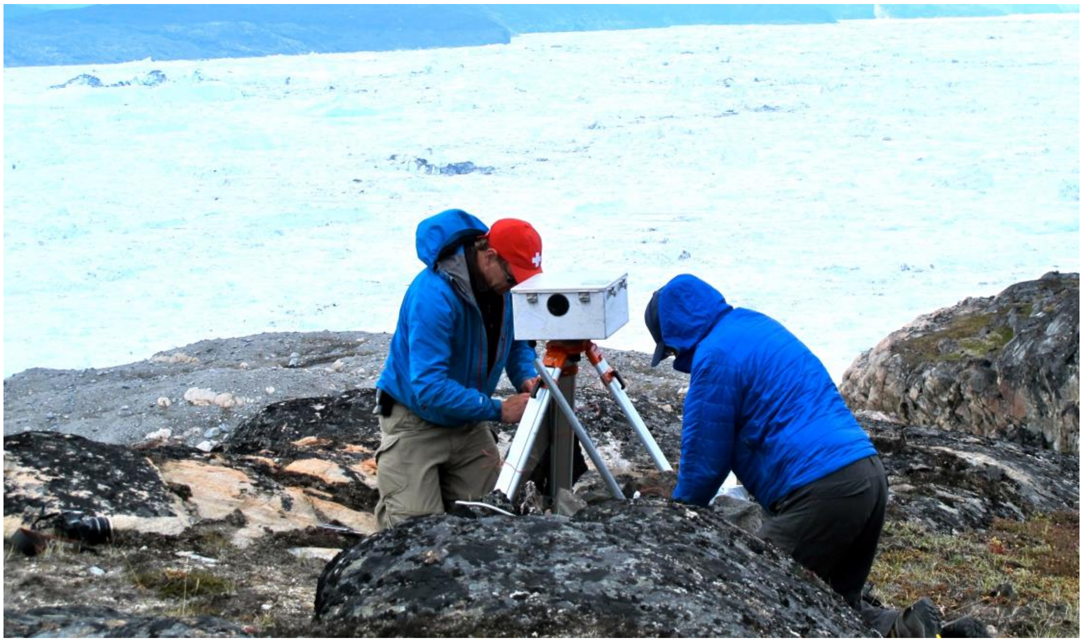


Figure 8.12. Scientists from the University of Alaska work on a time-lapse camera that records motion of the ice mélange in Jakobshavn's ice-filled fjord (background). At this location, the fjord is about 8 km wide. Photo by the author.

Figure 9.1. A beer glass commemorating a "Pint of Science" event, where well-known scientists give free lectures at a local pub. Photo by J. E. Dixon.