The geological setting of a place is the fundamental framework on which life depends, furnishing the basic requirements of water, food, and shelter. Illinois is abundantly endowed with life-supporting geological materials, making the state one of the most fertile, resource-rich, and hospitable regions on Earth and providing a home for several million people.

The geological setting of the state, however, also holds the potential for serious natural hazards, such as floods, landslides, earthquakes, and radiation. Human activities, too, can affect geological materials in ways that pose hazards and that may result in diminished environmental quality. Destructive activities include contaminating soil and groundwater, accelerating erosion due to poor agricultural and construction practices, building structures and infrastructure on unstable terrain or floodplains, and degrading the environment during the extraction of mineral resources. In many cases, these activities have been so subtle and pervasive and have occurred over such long periods of time that they have nearly gone unnoticed. However, the long-term effect can be more harmful than sudden damage from more obvious natural disasters.

Fortunately, awareness of land use and environmental hazards by the citizens of Illinois has grown considerably over the past 30 years. The disciplines of environmental and engineering geology are providing valuable insights that will help in the long-term management of the state’s geological hazards.

This part of the volume focuses on how geology impacts everyday activities and mitigates or exacerbates the effects of human actions on the environment.
Image on previous page: Aerial view of Grafton, Illinois, Jersey County, within the Mississippi River floodplain during the Great Flood of 1993.