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# THE NATURAL HISTORY of Natural Hazards

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The phrase "natural hazard" is usually taken to mean a type of geophysical occurrence, such as a drought, flood, earthquake, volcanic eruption, or severe storm, that has the potential to kill and injure large numbers of people; to destroy roads, buildings, and crops; to kill large numbers of livestock; and to generally disrupt the physical, economic, and social structure of a sizeable community. When such an event strikes a vulnerable community with sufficient severity and causes such destruction, it is called a "natural disaster."

There are other kinds of "natural" hazards that can lead to disasters. Biological hazards include diseases and plagues, which can lead to epidemics and famines. There are geochemical disasters, such as the eruptions of toxic gasses from volcanic crater lakes that killed nearly 2,000 people in Cameroon in 1984 and 1986. Forest and brush fires destroy annually the vegetative cover of millions of acres of land, leaving the soil vulnerable to erosion and decay. Hazards are also caused by people and technology: transportation accidents, petrochemical explosions, mine fires, building collapses, oil spills, hazardous waste leaks, and nuclear power plant failures. Many complex hazards have both natural and human components: erosion and desertification caused by deforestation and overgrazing during a time of drought; floods caused by dam failures; and landslides caused by poorly planned construction of roads on already unstable hillsides.

Whatever their cause, disasters have biological, geophysical, political, economic, and social implications, all of which are critical in understanding and implementing emergency medical care and other measures aimed at restoring the physical and mental health of affected communities. This chapter focuses on natural hazards that have a significant geophysical component and which can result in disasters.

## NATURAL AND GEOPHYSICAL HAZARDS

There are many kinds of natural hazards. Some are geophysical; that is, their causes and manifestations are rooted in the physics of the planetary mass and its envelope of air and water. Geophysical hazards include landslides, earthquakes, volcanic eruptions, tsunamis, tropical cyclones (the generic name for the storms called "hurricanes" in the United States), tornadoes, floods, droughts, and various forms of climatic change. Some geophysical hazards have biological and chemical components. Drought is a natural hazard with a geophysical cause, i.e., lack of water, but the devastating impact of drought lies in its effect on soil, vegetation, agriculture, and livestock. Thus, it has a significant biological component. Recent eruptions of toxic gasses from several lakes in Cameroon—disasters that are still not well