

## Floods and Flash Floods

**Learn about your flood risk.** Contact your local American Red Cross chapter, emergency management office, local National Weather Service office, or planning and zoning department to find out about your area's flood risk.

### AWARENESS MESSAGES

#### Why talk about floods?

Floods are among the most frequent and costly natural disasters according to FEMA. As much as 90 percent of the damage related to all natural disasters (excluding drought) is caused by floods and associated debris flows. . . Floods, on average, kill more than 100 people and are responsible for \$4.6 billion in damage in the United States each year.

Most communities in the United States can experience some kind of flooding. Melting snow can combine with rain in the winter and early spring; severe thunderstorms can bring heavy rain in the spring and summer; or tropical cyclones can bring intense rainfall to coastal and inland states in the summer and fall.

As land is converted from fields or woodlands to roads and parking lots, it loses its ability to absorb rainfall. Urbanization increases runoff two to six times more than what would occur on natural terrain. During periods of urban flooding, streets can become swiftly moving rivers, while basements and viaducts can become death traps as they fill with water.

#### What causes floods and flash floods?

Several factors contribute to flooding. Two key elements are rainfall intensity and duration. Intensity is the rate of rainfall, and duration is how long the rain lasts. Topography, soil conditions, and ground cover also play important roles.

Flooding occurs in known floodplains when prolonged rainfall over several days, intense rainfall over a short period of time, or an ice or debris jam causes a river or stream to overflow and flood the surrounding area. Floods can be slow- or fast-rising, but generally develop over a period of hours or days.

Most flash flooding is caused by slow-moving thunderstorms, thunderstorms repeatedly moving over the same area, or heavy rains from hurricanes and tropical storms. Flash floods take from several minutes to several hours to develop. Flash floods generally occur within six hours of a rain event, or after a dam or levee failure, or following a sudden release of water held by an ice or debris jam. Flash floods can occur without warning.

Floods can roll boulders, tear out trees, destroy buildings and bridges, and scour new channels. Floodwater can reach heights of 10 to 20 feet (3 to 6 meters) and often carries a deadly cargo of debris. Flood-producing rains can also trigger catastrophic debris slides.