

Floods are one of the most common hazards in the United States. A flood is defined as any high flow, overflow, or inundation by water which causes or threatens damage. Flood effects can be local, impacting a neighborhood or community, or very large, affecting entire river basins and multiple states. Each year coastal, estuarine, riverine, overland and flash flooding places thousands of people, pets and livestock at risk of serious injury and death, as well as destroys property and infrastructure costing in the billions of dollars.

- Flood Plains are the portions of a river valley that has been inundated by the river during historic floods
- Low-lying areas are subject to periodic severe flooding caused by any combination of heavy rains, melting snow, high tides and strong winds
- Land adjacent to or near rivers, creeks, sloughs, bays and the ocean are most vulnerable to flooding; however, flooding can occur in any lowland area
- November to April are the most vulnerable times for flooding, but flooding can occur any time of the year
- Thunderstorms, tropical storms and hurricanes, sustained or sudden rainfall amounts, rapid snowmelt, tectonic shifts (tsunamis / seiche) and technological errors (dam failures) are the main causes of flooding
- NOAA data indicates that floods kill more people annually than lightning, tornadoes and hurricanes
- Deadly storm surges and inland flooding in 2005 caused extraordinary losses of life and property damage in the aftermaths of hurricanes Katrina and Rita

Flood Types: Not all floods are the same. Some floods develop slowly, sometimes over a period of days. Flash floods however can develop quickly, sometimes in just a few minutes and without any visible signs of rain.

- **Flash Floods:** A rapid and extreme flow of high water into a normally dry area, or a rapid water level rise in a stream or creek above a predetermined flood level, beginning within six hours of the causative event
 - The actual time threshold may vary in different parts of the country
 - Ongoing flooding can intensify to flash flooding in cases where intense rainfall results in a rapid surge of rising flood waters
- **Overland Floods:** In hydrologic terms, the flow of rainwater or snowmelt over the land surface toward stream channels, once it enters a watercourse it becomes runoff
 - Flooding occurs outside defined rivers / streams into flood plains
- **Flood Watch:** Issued to inform the public and cooperating agencies that current and developing hydrological conditions are favorable for flooding, but the occurrence is neither certain nor imminent
- **Flash Flood Watch:** Issued to indicate current or developing hydrologic conditions that are favorable for flash flooding in and close to the watch area, but the occurrence is neither certain or imminent
- **Flood Warning:** Issued to inform the public of flooding along larger streams in which there is a serious threat to life or property
 - A flood warning will usually contain river stage (level) forecasts
- **Flash Flood Warning:** Issued to inform the public, emergency management and other cooperating agencies that flash flooding is in progress, imminent, or highly likely

Flood Categories: Terms used to describe the forecast points which describes or categorizes the severity of flood impacts in the corresponding river/stream reach.

- **Minor Flooding:** Minimal or no property damage, but possibly some public threat
- **Moderate Flooding:** Some inundation of structures and roads near stream. Some evacuations of people and/or transfer of property to higher elevations
- **Major Flooding:** Extensive inundation of structures and roads. Significant evacuations of people and/or transfer of property to higher elevations.
- **Record Flooding:** Flooding which equals or exceeds the highest stage or discharge at a given site during the period of record keeping

Be Prepared: *Take Protective Measures to Protect your Home from Minimize Flooding*

- Avoid building in flood-prone areas unless you elevate and reinforce your home
- Elevate the furnace, water heater, and electric panel if susceptible to flooding
- Install "check valves" in sewer traps to prevent floodwater from backing up into the drains of your home
- Contact community officials to find out if they are planning to construct barriers (levees, beams, floodwalls) to stop floodwater from entering the homes in your area
- Seal the walls in your basement with waterproofing compounds to avoid seepage
- Sandbagging around your home may be necessary – plan ahead to have bags on hand, ready to fill
- Purchase flood insurance as regular homeowner's insurance policies will not cover flooding

Develop Emergency Plans: Families, schools and workplaces should develop written emergency plans. Plans should be practiced; home plans should be shared with other friends and extended family.

Create Emergency Supply Kits: Families, schools and workplaces should build supply kits. At home, include all family members and pets for at least three days that is portable in case of evacuation. Kits should include:

- Food and water
- Medicine and copies of prescriptions, personal hygiene items and first aid supplies
- Important documents, personal identification, copies of insurance, etc.
- Cash or travelers checks
- Other essential supplies (flashlights, extra batteries, blankets, seasonal clothing, battery or crank radio)

During the Flood: *Evacuating your Home*

- Take Readiness Supply Kits with you when evacuating
- Turn off utilities and do not touch electrical equipment if you are wet or in standing water
- Avoid walking through moving water
- Avoid driving into flooded areas
- Be cautious as floodwaters may be contaminated

After the Flood: *Re-entering Flood impacted Areas*

- Use caution when entering buildings
- Return home only when it has been indicated to be safe
- Clean and disinfect everything that got wet; dry things out to avoid mildew
 - Some items are not salvageable, either due to contamination or water damage
 - Service damaged water and sewage systems as soon as possible

Turn Around... Don't Drown: Many flood casualties are the results of careless or unsuspecting motorists attempting to navigate flooded roads. The National Weather Service now warns "Turn around... don't drown!"

- If flooding occurs, get to higher ground and avoid flood-prone areas, low spots, valleys, ditches, washes, etc.
- Avoid flooded areas or those with rapid water flow and do not attempt to cross a flowing stream
 - It takes only six inches of fast flowing water to sweep you off your feet
- Do not allow children to play near high water, storm drains or ditches
- NEVER drive through floodwaters or on flooded roads
 - If your vehicle stalls, leave it immediately and seek higher ground
 - Water only two feet deep can float away most vehicles
- Avoid camping or parking your vehicle along water sources when threatening conditions exist
- Be especially cautious at night when it is harder to recognize flood dangers

Information Sources:

www.eden.lsu.edu; www.fema.gov; www.ready.gov; www.weather.gov; www.noaa.gov; www.redcross.gov; www.ag.ndsu.edu/disaster/homeinformation.html#FloodInformation