

## POST WILDFIRE FLASH FLOOD HAZARDS AND NWS PRODUCTS

Flooding is an overflow of water onto land that is normally dry, and flash floods are exactly what the name suggests: **floods that happen in a flash!** In burned areas, flash floods occur most often when rainfall reaches **half an inch in an hour**. When it rains in a burn area, flash floods can start debris flows that **can reach many miles downslope from the burn area** – where it may not even be raining.

It is important to understand that for any burn area, it takes much less rainfall to cause flash flooding than it would have before the wildfire occurred

**Be Aware, and continue monitoring conditions when the National Weather Service issues the following:**

- **Flood Advisory: Be Aware.** A Flood Advisory is issued when a forecasted weather event may cause a hazard, but it's the kind of hazard which most people can avoid. This is nuisance type flooding. It may cause travel problems with closed or partially closed roads, small rock slides, and such. It won't cause much in the way of permanent damage like flooded structures. You should continue monitoring local news outlets and your local National Weather Service office for updates as conditions develop. A Flood Advisory is issued when flooding is not expected to be bad enough to issue a warning. However, if reasonable precautions are not taken the hazard could become very serious. Do not drive into flooded areas!

**Be prepared for a flash flood when the National Weather Service issues the following:**

- **Flash Flood Watch: Be prepared.** A Flash Flood Watch is issued to indicate current or developing conditions that may result in flash flooding. However, flash flooding is not imminent, and there may be some uncertainty in location or timing. In areas where wildfires have happened, a watch is typically issued within several hours to days ahead of thunderstorms and rain events that could possibly generate flash flooding because conditions on the ground have been changed by the wildfire.

**Take action to keep your family and community safe when the National Weather Service issues the following:**

- **Flash Flood Warning: Take action.** A Flash Flood Warning is issued when a flash flood is imminent or occurring. If you are in the warning area, take action immediately as these conditions are often life threatening. **Even if you were not impacted by the wildfire, it does not mean you are safe from the possibility of a flash flood that flows from a burn area.**



## DEBRIS FLOW FLASH FLOOD WATCHES & WARNINGS

In California and other western states, **post-fire flooding and debris flows** are a significant threat after wildfires, both in terms of life-safety and property damage. Changes in land cover due to wildfire can cause streams to produce extremely large amounts of fast moving runoff and sediment. Post fire, soil conditions on the ground have been changed by the wildfire. Debris flows are generated when high intensity rains fall in a short duration of time over the burn scar (like with a thunderstorm). Debris flows are made of water, mud, boulders, trees and other debris. They have the consistency of a thick milkshake, and have been shown to **move 10 times faster than a similar flash flood and reach depths 5 times higher**. Debris flows, do not necessarily follow the established stream channel, they make their own path. A recent example is the Thomas Fire burn area that led to 23 deaths from the flash flooding and debris flows in Montecito, CA on January 9, 2018.

When there is a threat or potential threat of flash flooding for debris flows, the National Weather Service may issue **“Flash Flood Watch for Debris Flows”** or **“Flash Flood Warning for Debris Flows”**. Understanding National Weather Service “watches” and “warnings” specifically for debris flows can help keep you, your family and community safe.

### When the National Weather Service issues the following:

- **Flash Flood Watch for Debris Flows: Take Action Now.** A Flash Flood Watch is issued to indicate current or developing conditions that may result in flash flooding and debris flows. However, debris flows are not imminent, and there may be some uncertainty in location or timing. In areas where wildfires have happened, a watch is typically issued within several hours to days ahead of thunderstorms and rain events that could possibly generate debris flows. **Take immediate action as per guidance from your local emergency services agency or law enforcement. If told to evacuate – do so now.**

### Take action to keep your family and community safe when the National Weather Service issues the following:

- **Flash Flood Warning for Debris Flows: Extreme Danger!** A Flash Flood Warning is issued when a flash flood and debris flow is imminent or occurring. If you are in the warning area, it is too late to leave as the conditions are already life threatening. Impacts from flash flooding for debris flows can occur very quickly and many miles away from the burn area. **Even if you were not impacted by the fire, it does not mean you are safe from the possibility of flash flooding and debris flows.** If you have not evacuated your home, move to the highest floor away from windows. The debris flow can quickly inundate the lower levels of the house, and sweep away the contents. However, the upper levels of the house frame should stay intact. If you are in a car and caught in a debris flow, stay in the car. Your car will float and will absorb the damage from the debris flow. If you exit the car, you will be swept up in the debris flow and likely killed.

