

WILDFIRE & WATER

How does wildfire change water systems on the landscape?

Flooding

Wildfires fundamentally change the way water moves through landscapes. Soils that have experienced intense and severe fires become hydrophobic, repelling surface water from being absorbed. Floods can be much larger than they were before fire, and properties previously considered safe from flooding could now be at risk, especially those located on alluvial fans or near flood plains. Flood risk remains higher until vegetation is restored. Residents and businesses in areas downstream of a wildfire need to be aware of the hazards they face, the steps they can take to reduce their risk, and the resources that may be available to assist them.

Debris Flows

Debris flows are fast moving masses of material that can transport boulders, gravel, downed trees, and mudflows. Debris flows are often triggered by short, intense periods of rainfall and pose serious risks after wildfires. It is critical to heed warnings from local officials and the National Weather Service (NWS), as debris flows move extremely fast. People who live and work on an alluvial fan need to be especially alert to debris flow dangers, which can persist for many years after a wildfire.

Learn how to determine if you live or work on an alluvial fan from the [Washington Geological Survey](#).

Roads and Stormwater

After a fire, stormwater and smaller floods may be common across roads, sometimes in places that don't typically flood. Pay attention to and properly maintain the condition of stormwater infrastructure like culverts.

Surface Water

Runoff from post-fire flooding and debris flows can carry many contaminants into surface water systems, including flame retardants, ash, and sediment. The influx of materials can raise nutrient levels and increase pH and alkalinity. Irrigation systems and wells can also be clogged by high concentrations of sediment and ash.

Wildfire drastically alters the landscape, changing how water moves and creating dangerous hazards. Understanding what to expect and look out for is an important part of staying safe throughout the recovery process. Just because a fire has been put out, does not mean risk to life and property has been eliminated.



A car that was caught in a post-fire debris flow.
Photo: Department of Natural Resources.

What you can do

- Look into flood insurance at [floodsmart.gov](#).
- Sign up for emergency alerts through your county's emergency management office and NWS.
- Be prepared to respond quickly to flooding events. Check out the [Ready.gov](#) webpage about preparing for and staying safe during a flood.
- Move to higher ground to avoid flood water. Never enter or drive through flood water.
- Take action to prevent erosion and control sediment on your property to avert physical hazards and stop pollution from entering waterways.
- Implement practices to improve surface water quality and maintain irrigation system function, such as settling ponds and hill slope or channel treatments.