

## Debris Flow Hazards

- Debris flows occur when debris (trees, bushes, soil) are caught up in a flash flood
- Healthy vegetation typically holds the soil in place
- However, the lack of healthy vegetation after a fire promotes erosion
- This extra amount of erosion increases the chances for debris flows
- As seen in the image below, debris flows can happen at any time during increased periods of rainfall
- People can become trapped in vehicles or caught up in the debris flows
- Extra caution should always be taken during times of heavy rainfall



### National Weather Service

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## How Flash Flooding Could Change After the Fires



Weather plays a huge role in the controlling of the fire behavior, but often people are uninformed about the lingering effects that fires can cause. This pamphlet examines how flash flooding risks may be heightened in and near burn areas.



*National Weather Service Tucson, AZ*

## How the Soils Change

- Burned soil creates a more water resistant surface
- The soils obtain a waxy characteristic near the surface
- The waxy surface repels water
- The water flows over the waxy surface and does not soak into the ground very well
- Water runs off more quickly than normal
- This trait of hydrophobic (burned and waxy) soils can remain for many years leading to flooding issues well into the future



This image from Oregon State University shows a drop of water on hydrophobic (burned and waxy) soil. The droplet does not soak into the soil because of the waxy coating.

## Higher Flash Flooding Potentials

- Flash flooding is much more likely after a wildfire
  - Every area is unique and increased flash flood risk with vary in magnitude
- Time required for a flash flood to begin depends on several factors
  - How severe the fire burned
  - How steep the terrain is
  - Rate of precipitation
- General rule of thumb is 0.5" rainfall in less than 1 hour is sufficient to cause flash flooding in a burn area, but this can be more or less depending on the factors above.
- During times of rainfall over a burn area, remain informed on the weather by:
  - 1) [www.weather.gov/tucson](http://www.weather.gov/tucson)
  - 2) Wireless Emergency Alerts
  - 3) NWS Tucson Twitter Account
  - 4) NOAA Weather Radio
  - 5) Local News Media

## Flash Flooding Impacts



- Flooded streams and washes are common during the monsoon season
- This season additional flooding may occur due to increased run-off.
- Storm flooding will be an issue that will effect both motorists and pedestrians. Appropriate measures should be taken by all to avoid flood dangers.
- Just a reminder as you approach flooded washes and streams **“Turn Around, Don’t Drown.”**

