

Before Floods & Debris Flows

- Pay attention to local emergency response messaging and heed evacuation notifications immediately
- Sign-up for local wireless emergency alerts sent by authorized government agencies
- Monitor incoming storms, especially if you live in burned areas or downstream/downslope of a burned area
- Make sure you have non-perishable emergency supplies and a disaster supply kit.
- Have an evacuation plan in place for you and your pets.
- Have a battery-powered AM/FM weather radio and a cell phone to listen for emergency updates and weather forecasts. Don't forget extra batteries!
- Talk to your insurance agent about purchasing flood insurance.

During Floods & Debris Flows

- Remember: local authorities may indicate it is safer for you and your family to shelter in place if flash flooding is not impacting your neighborhood.
- Do not walk through moving water – just six inches of water can sweep an adult off his/her feet.
- Do not attempt to drive through a flood, debris flow, or into flooded areas. It takes only a foot of water to float or sweep away most vehicles.



Helpful Resources:

Websites:

FEMA Disaster supply kit:
<https://www.ready.gov/build-a-kit>
checklist of what you'll need for your kit.

National Flood Insurance Program:
www.fema.gov/national-flood-insurance-program
provides homeowners information about flood risk, flood maps and flood insurance.

CAL FIRE:
www.readyforwildfire.org/postwildfire/
provides information about why flood risk increases after wildfires.

National Oceanic and Atmospheric Administration, NOAA
www.wrh.noaa.gov/lox/hydrology/files/DebrisFlowSurvivalGuide.pdf

Mobile Apps:

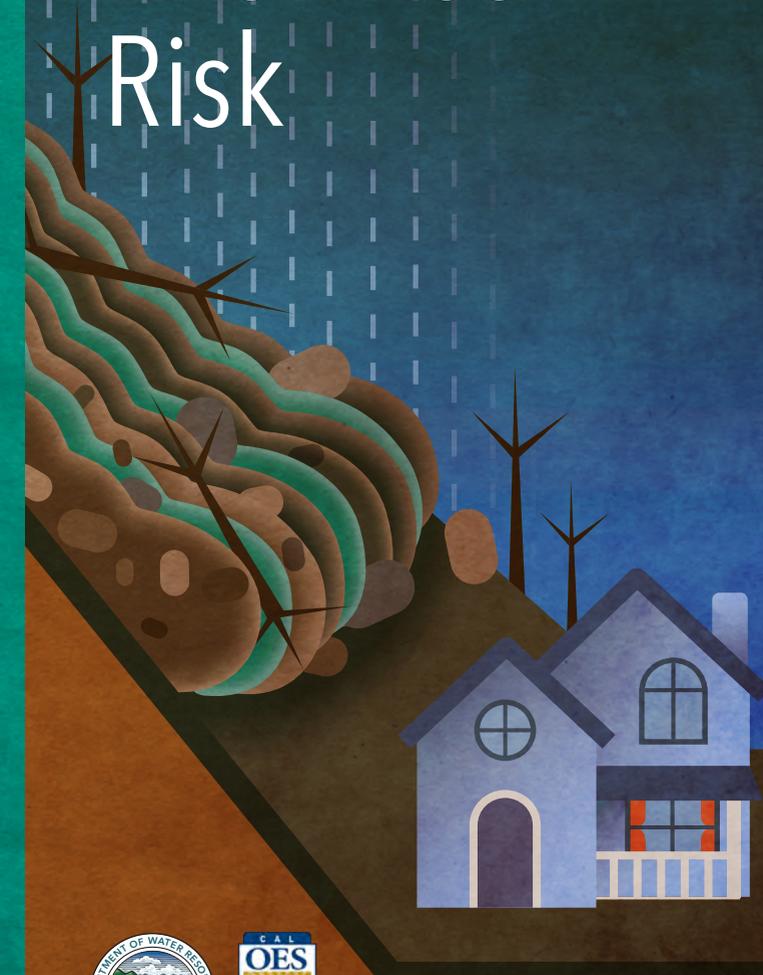
FEMA Mobile App:
www.fema.gov/mobile-app
helps you plan for and respond to natural disasters.

American Red Cross First Aid App:
www.redcross.org/mobile-apps/first-aid-app
provides first aid information – videos, checklists, etc. – that can be accessed without cellphone coverage.

ReUnite:
<https://itunes.apple.com/us/app/reunite/id368052994?mt=8>) from the National Institute of Health helps connect lost family members and friends in a disaster situation.

NOAA Weather Radio App for smartphones provides up-to-date weather information and alerts:
Android
play.google.com/store/apps/details?id=com.coudriet.weatherradio&hl=en
iPhone
itunes.apple.com/us/app/noaa-weather-radio/id410148139?mt=8

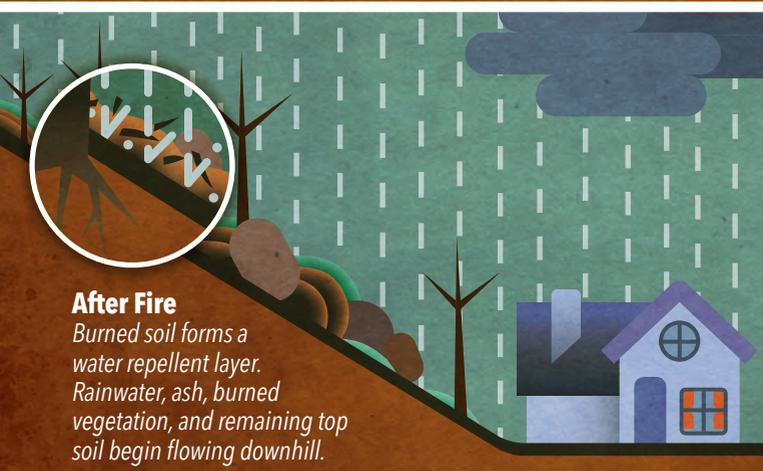
Flood After Fire: Know Your Risk



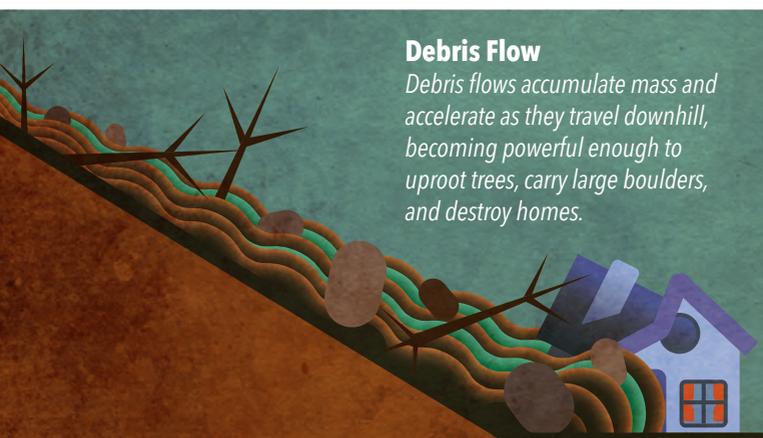
Anatomy of a Debris Flow:



Normal
Vegetation helps retain rainwater, so it soaks into the ground.



After Fire
Burned soil forms a water repellent layer. Rainwater, ash, burned vegetation, and remaining top soil begin flowing downhill.



Debris Flow
Debris flows accumulate mass and accelerate as they travel downhill, becoming powerful enough to uproot trees, carry large boulders, and destroy homes.



Did You Know?

- Debris Flows and Mud Flows Can Occur for Five Years After a Wildfire
- Debris flows can happen any time of the year.
- Debris flows can move at 35 mph and travel miles from where they start.
- NFIP flood insurance covers a temporary condition of flooding covering at least two acres or two properties, including a river of flowing mud over normally dry land.
- Thunderstorms that develop over burn areas can cause flash flooding and debris flows nearly as fast as National Weather Service radar can detect the rainfall.

Recent California Fires¹

- ◆ 2018 Fires in November
- ◆ 2018 Fires, all other months
- ◆ 2017 Fires (Nov. – Dec.)
- Larger burn areas (from both years)

1. Source: California Statewide Fire Map
<http://www.fire.ca.gov/general/firemaps>

Flooding: Not Just Water Mud Flow vs. Debris Flow

Debris flows can take homes off their foundations; **mudflows** don't. Mudflows are mostly made of water and soil. Debris flows carry things like vegetation, trees, large boulders, and vehicles. Debris flows can become mudflows, and both can occur during the same storm event for up to years after wildfires. **Both happen fast, so heed evacuation warnings immediately!**

