



Are You Ready?

LANDSLIDES

A Fact Sheet for People who are Deaf or Hard of Hearing



Landslides occur when a large amount of rock, earth, or debris move down a hill. Landslides may be very small or very large, and can move at slow to very high speeds. Many landslides have been happening in the same areas since prehistoric times. New landslides are caused by rainstorms, earthquakes, volcanic eruptions, and/or various human activities. Mudflows (or debris flows) are rivers of rock, earth, and other debris soaked with water. They develop when water builds up quickly in the ground, such as during heavy rainfall or rapid snowmelt, changing the earth into a flowing river of mud or "slurry." Slurry can flow fast down slopes or through channels, and can strike with little or no warning at avalanche speeds.

Plan ahead.

Your county geologist or county planning department may have specific information on whether your area is in danger for a landslide. If you are in a landslide-prone area, take necessary precautions.

Stock up on supplies, such as:

- Flashlight and extra batteries
- Cell phone with text message feature or two-way pager and charger to use in your automobile
- Portable TTY with extra batteries
- Batteries and back-up hearing assistive technology
- Portable battery-operated television with extra batteries and charger to use in your automobile
- NOAA radios with text alerts and visual and/or tactile alerts, or AM/FM portable radio if you can hear it with a neckloop or headset
- Extra contact lenses or eyeglasses
- Paper and pens
- First aid kit
- Food and water (for up to 72 hours)
- Non-electric can opener
- Cash and credit cards
- Work or hiking shoes/boots to protect your feet when walking thru disaster areas

Develop an emergency communication plan.

In case household members are separated from one another during a landslide, have a back-up plan for where you can meet each other. Before disaster strikes, ask an out-of-state relative or friend to be a contact person. During or after the disaster, contact that person by pager or TTY. If you don't have a pager or a working TTY, ask a hearing person with a cell phone to call for you. Be sure everyone in the household knows the name, address, and phone number of the contact

person.

Minimize home hazards.

- Plant ground cover on slopes and build retaining walls.
- In mudflow areas, build channels or deflection walls to direct the flow around buildings.
- Remember: If you build walls to divert debris flow and the flow lands on a neighbor's property, you may be liable for damages.

Learn to recognize landslide warning signs.

- Doors or windows stick or jam for the first time.
- New cracks appear in plaster, tile, brick, or foundations.
- Outside walls, walks, or stairs begin pulling away from the building.
- Slowly developing, widening cracks appear on the ground or on paved areas such as streets or driveways.
- Underground utility lines break.
- Even, flat ground appears at the base of a slope.
- Water breaks through the ground surface in new locations.
- Fences, retaining walls, utility poles, or trees tilt or move.
- You feel weak rumbling that increases in intensity as the landslide nears. The ground slopes downward in one specific direction and may begin shifting in that direction under your feet.

Evacuation

Plan at least two evacuation routes since roads may become blocked or closed. If officials order an evacuation, leave immediately. Prepare your home by unplugging all of your appliances and turn off all electrical power and the water supply.

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After the Landslide:

- Stay away from the landslide area. There may be danger of additional landslides.
- Check for injured and trapped persons near the landslide area.
- Give first aid if needed.
- Remember to help your neighbors who may require special assistance, such as infants, elderly people, and people with disabilities.
- Check your television or e-mail for the latest emergency information.
- Remember that flooding may occur after a mudflow or a landslide.
- Check for damaged utility lines. Report any damage to the utility company.
- Check the building foundation, chimney, and surrounding land for damage.
- Replant damaged ground as soon as possible since erosion caused by loss of ground cover can lead to flash flooding.
- Seek the advice of a geotechnical expert for evaluating landslide hazards or designing corrective techniques to reduce landslide risk.
- Landslide problems can be caused by land mismanagement, particularly in the mountains, canyons and coastal regions. Land-use zoning, professional inspections and proper design can minimize many landslides, mudflow and debris flow problems.



In La Conchita, CA, landslide and debris flow occurred in the spring of 1995. Many people were evacuated because of the slide and the houses nearest the slide were completely destroyed. Fortunately, no one was killed or injured. (Photo by R.L. Schuster, U.S. Geological Survey. landslides.usgs.gov)

Information adapted from materials by the Federal Emergency Management Agency (www.fema.gov).



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