LANDSLIDE HAZARDS

WASHINGTON GEOLOGICAL SURVEY

This fact sheet is designed to provide general information about landslide hazards and possible warning signs. Individual landslides have many variables and are not predictable.

WARNING SIGNS OF AN IMPENDING LANDSLIDE

- Landslides are dangerous and unpredictable. Some landslides may provide clues that they are about to happen; others may happen suddenly without any warning signs.
- Rapidly growing cracks in the ground; downslope movement of rock, soil, or vegetation.
- Sudden changes in creek water levels, sometimes with increased sediment, especially during or right after large or protracted storm events.
- Sounds of cracking wood, knocking boulders, groaning of the ground, or other unusual sounds, especially if the sound increases.

IF YOU NOTICE THESE SIGNS OR OBSERVE A LANDSLIDE IN PROGRESS

Leave the area immediately if it is safe to do so! Landslides are dangerous, unpredictable, and can occur rapidly. A landslide can easily destroy or bury a car or house. Report the problem immediately to your county Emergency Manager.

WARNING SIGNS OF A POTENTIAL LANDSLIDE

- A hillside that has increased spring and (or) seep activity, or newly saturated ground, especially if it was previously dry.
- Formation of cracks or tilting of trees on a hillside.
- New or developing cracks, mounds, or bulges in the ground.
- Sagging or taut utility lines; leaning telephone poles, deformed fences, or bent trees.
- Sticking windows or doors; new and (or) growing cracks in walls, ceilings, or foundations.
- Broken or leaking utilities, such as water, septic, or sewer lines.
- Separation of structures from their foundation; movement of soil away from foundations.
- Changes in water well levels or water wells that suddenly run dry.

WHAT TO DO IF YOU THINK A LANDSLIDE MAY OCCUR

Signs of a potential landslide should be reported to your county Emergency Manager so that the area can be properly evaluated (See RESOURCES on back page).

WASHINGTON STATE DEPT OF NATURAL RESOURCES

WASHINGTON GEOLOGICAL SURVEY • MS 47007 • Olympia, WA 98504-7007 • 360-902-1450 • www.dnr.wa.gov/geology • email: geology@dnr.wa.gov

REPORT LANDSLIDES

Report landslides to your county Emergency Manager: mil.wa.gov/other-links/emd-contact-us
LANDSLIDES AND THE WASHINGTON GEOLOGICAL SURVEY

Our mission is to collect, develop, use, distribute, and preserve geologic information to promote the safety, health, and welfare of the citizens, protect the environment, and support the economy of Washington. To this end, we conduct and maintain an assessment of landslide hazards in Washington. This assessment is not comprehensive. We also provide technical assistance to state and local government agencies on the interpretation and application of this assessment. Every year, we respond to and (or) record hundreds to thousands of landslides.

RESOURCES

City/County Emergency, Health, and Planning Departments
Emergency Management—mil.wa.gov/other-links/emd-contact-us
Counties—www.mrsc.org/byndmrsc/counties.aspx
Cities—www.mrsc.org/byndmrsc/cities.aspx

Washington Geological Survey
Geologic Information Portal—www.dnr.wa.gov/geologyportal
Shallow Landslide Hazard Forecast Map—http://fortress.wa.gov/dnr/protection/landslidewarning


Washington State Department of Transportation
Road closures due to landslides—www.wsdot.wa.gov/

Federal Emergency Management Agency (FEMA)
Landslides—www.ready.gov/landslides-debris-flow

U.S. Geological Survey (USGS)
Landslide Hazards Program—http://landslides.usgs.gov/

Landslide Insurance
http://insurance.wa.gov/your-insurance/home-insurance/landslides/

Washington State Department of Licensing

Washington State Department of Ecology

REDUCE YOUR RISK

Most landslides and flows occur during or up to several days after a heavy rainfall or rapid snowmelt event. Earthquakes can also initiate landslides so be alert if you feel the ground shake and you are near sloping ground.

• Educate yourself about your landslide risk. Locations that experienced landslides in the past are more likely to have future landslides. The Washington Geologic Information Portal contains the most comprehensive listing of landslides available. However, because not all landslides are mapped, the absence of a landslide in the database does not indicate the absence of risk.

• Make a landslide emergency plan. Know what areas near your home or work are at risk. Know which areas are safe and how to reach them in an emergency.

• Consider evacuating prior to storm events which can cause sudden flooding and (or) landslides.

• Avoid living in locations that are hazardous. Areas above or below steep slopes, or in areas known to have frequent landslides, are more likely to experience landslides in the future.

• Consult a licensed geologist or licensed geotechnical engineer if you would like a site-specific evaluation.

• Control runoff from buildings and roads so it flows away from steep slopes and into natural drainages or storm drains.

DURING DANGEROUS WEATHER

• Seek out advisories and warnings during and after intense rainfall events. Check the NOAA Weather Radio, your local TV stations, and the Shallow Landslide Hazard Forecast website at https://fortress.wa.gov/dnr/protection/landslidewarning.

• Don’t assume that highways are safe—watch for collapsed pavement, mud, fallen rock, or other debris on the roadway.

• Listen for loud or unusual sounds. These can be indicators of an imminent landslide. If you think there is danger, evacuate immediately.

• Keep away from landslide-prone areas.