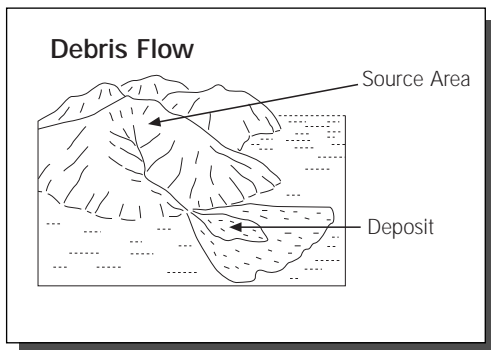


HOMEOWNER'S GUIDE TO RECOGNIZING AND REDUCING LANDSLIDE DAMAGE ON THEIR PROPERTY

Utah Geological Survey, Public Information Series 58

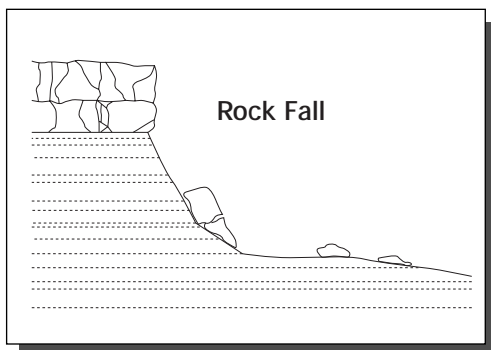
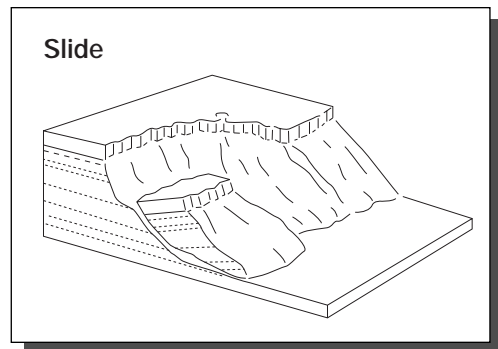
Landslides are common in Utah. Landslide hazards are greatest near or on steep slopes or along streams. Listed below are suggestions on how to recognize landslides and landslide-prone areas, and what to do to reduce the likelihood of landslides. And REMEMBER - Homeowner's insurance typically does not cover landslide damage!

1. Three common types of landslides in Utah:



Debris flows consist of sediment-water mixtures that flow down a streambed or hillslope, commonly depositing sediment at canyon mouths.

Slides are downslope movements of soil or rock on slopes.



Rock falls consist of rock(s) falling from a cliff or cut slope.

2. Landslides commonly occur as a result of:

- Heavy rainfall.
- Rapid snowmelt.
- A wet winter and spring, particularly if previous years were also wet.
- Grading that removes material from the base, loads material at the top, or otherwise alters a slope.
- Earthquakes.
- Erosion or previous landsliding removing material from the base of a slope.
- Addition of water to a slope from agricultural or landscape irrigation, roof downspouts, poor drainage, septic-tank effluent, canal leakage, or broken water or sewer lines.

3. Areas that are generally prone to landslides are:

- Existing landslides.
- Steep natural slopes, particularly in weak geologic materials.
- Steep construction-related cut or fill slopes.
- Areas in or at the mouths of drainages (such as canyons).
- Slopes below leaking canals or ponds.
- Developed hillsides where septic-tank soil-absorption systems are used and landscapes are irrigated.
- Below cliffs or hills with outcrops of fractured rock.

4. Features that might indicate landslide movement are:

- Springs, seeps, or saturated ground in previously dry areas.
- Cracks in snow, ice, soil, or rock.
- Unusual bulges or elevation changes in the ground, pavements, or sidewalks.
- Soil pulling away from foundations.
- Decks and patios tilting and/or moving relative to the main house.
- Excessive tilting or cracking of concrete floors and foundations.

- Broken water lines and other underground utilities.
- Tilting telephone poles, trees, retaining walls, or fences.
- Rapid increase or decrease in stream water levels, possibly accompanied by increased turbidity (soil content).
- Offset fence lines.



Ground Crack



Foundation Damage

- Sunken or down-dropped roads.
- Sticking doors and windows, and visible open spaces indicating walls and frames out of plumb.
- Appearance of bare spots on slopes.
- Intermittent creaking, snapping, or popping noises from a house.

5. What a homeowner can do to reduce the likelihood of landslides:

- Minimize landscape irrigation - overwatering on bluff-tops is a common cause of landslides.
- Drain water from surface runoff, downspouts, and driveways well away from unstable slopes and landslides.
- Make sure water and sewer lines do not leak.
- Avoid removing material from the base of slopes or adding weight at the top.
- Contact a geotechnical consultant for professional advice.

6. What to do if you suspect imminent landslide danger:

- Contact your local fire, police, or public works department.
- Inform neighbors.
- Evacuate.

7. For further information on landslides in your area:

- In Salt Lake County, contact the County Geologist at 468-2061.
- Contact the Utah Geological Survey at 801-537-3300.
- Contact the Utah Division of Comprehensive Emergency Management at 801-538- 3400.
- For a detailed site analysis, contact a private consulting company specializing in earth movement. Such companies are listed in the Yellow Pages and specialize in geotechnical engineering and engineering geology. Your state or county geologist could advise you of the type of professional to contact.

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