



# HOW TO PREPARE AND PROTECT YOUR FAMILY IN LANDSLIDES

# ***GETTING TO KNOW*** ***LANDSLIDES***

Landslides are caused when the stability of soil deposits changes from a stable to an unstable condition. A change in the stability of a slope can be caused by a number of factors like by nature or man-made.





# NATURAL CAUSES



**Groundwater pressure** acting to destabilize the slope.

**Loss or absence** of vertical vegetative structure, soil nutrients, and soil structure.

**Erosion** of the toe of a slope by rivers or ocean waves.

**Weakening of a slope through saturation** by snowmelt, glaciers melting, or heavy rains.

**Earthquakes** adding loads to barely-stable slopes.

**Earthquake-caused liquefaction** destabilizing slopes.

**Volcanic eruptions.**

# HUMAN CAUSES



**Vibrations** from machinery or traffic

**Blasting**

**Earthwork which alters the shape of a slope**, or which imposes new loads on an existing slope

In shallow soils, the **removal of deep-rooted vegetation** that binds colluvium to bedrock

**Construction, agricultural, or forestry activities** which change the amount of water which infiltrates into the soil.

# Pictures



**"THE PROMISED LAND"**  
**PAYATAS GARBAGE LANDSLIDE**

July 10, 2000

Estimated Death Toll: more than 500

# paint a thousand words



***ST. BERNARD, SOUTHERN LEYTE***

**February 17, 2006**

**Estimated Death Toll: More than 1,100**



# **BE INFORMED!**

## ***SURVIVING A LANDSLIDE OR MUDSLIDE***

Heavy rains can make some terrain unstable.

This can cause occasional land and mudslides. These forces of nature can be incredibly destructive. There is nothing to fear as long as you and your family are prepared.



# PREPARE TO PROTECT YOUR HOME AND FAMILY

Before a landslide or mudslide, there are steps you can take to improve your safety:

1

Do not build near steep slopes, mountain edges, drainage ways, or natural erosion valleys.

2



Get a ground check-up of your property.

3

Consult an appropriate professional expert for advice on any corrective measures.





A person wearing a white helmet with a headlamp, a dark safety vest over a white shirt, and a blue backpack is looking towards a steep, rocky hillside. The hillside shows signs of erosion and a landslide. The background features more hills and a clear sky.

# RECOGNIZE WARNING

*In most cases, landslides do not happen in an instant. There are often warning signs that can tell you that a landslide is coming. This gives you precious time to take safety measures:*

## Changes occur in your landscape:



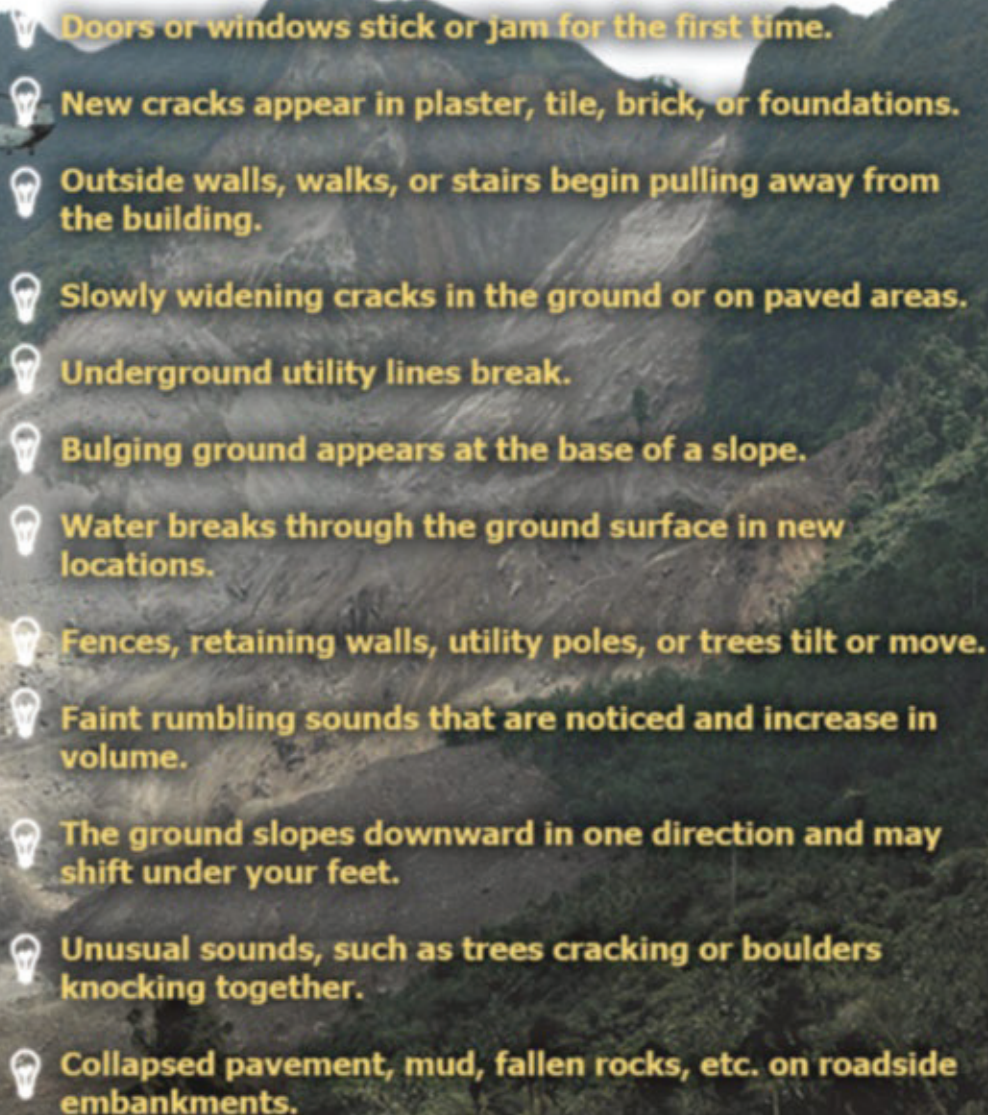
**Patters of storm-water drainage on slopes (especially where runoff converges) like Land movement, small slides, flows.**



**Progressively leaning tree**



# A LANDSLIDE'S BIG 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 widening cracks in the ground or on paved areas.
  - Underground utility lines break.
  - Bulging 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.
  - Faint rumbling sounds that are noticed and increase in volume.
  - The ground slopes downward in one direction and may shift under your feet.
  - Unusual sounds, such as trees cracking or boulders knocking together.
  - Collapsed pavement, mud, fallen rocks, etc. on roadside embankments.

# **BE SAFE!**

## **FOLLOW THESE SAFETY TIPS**

### **During a Landslide or Debris Flow**

If you are caught near a landslide or mudslide, the guidelines are very simple:

1. If you can, move away from the slide's path as quickly as possible.
2. If you cannot escape, curl into a tight ball and protect your head.





## After the Landslide

After the slide has passed, there are several safety guidelines to keep in mind:

1. Stay away from the slide area:
  - There may be danger of additional slides.
2. Check for injured and trapped persons near the slide, without entering the area:
  - Direct rescuers to their locations.
3. Watch for associated damage:
  - Electrical, water, gas, and sewage lines.
  - Damaged roadways and railways.
4. Replant damaged ground as soon as possible:
  - Loss of ground cover can lead to flash flooding and more landslides.
5. Seek advice from a geotechnical expert for evaluating landslide hazards.
6. Have a professional design ways to reduce further landslide risk.
7. Do not enter the area until you have been told to do so by officials.



**IN CASE OF**

**EMERGENCY**





***CALL YOUR NEAREST BARANGAY:***

Landline \_\_\_\_\_

Mobile Phone: \_\_\_\_\_

***CALL YOUR NEAREST RED CROSS CHAPTER:***

CHAPTER: \_\_\_\_\_

Landline \_\_\_\_\_

Mobile Phone: \_\_\_\_\_

***We should all be prepared for emergencies.  
Knowing what to do in advance can mean  
the difference between life and death.***

**LET'S LEARN  
AND HAVE SOME  
FUN!**





# **GUESS IT RIGHT!!!**

**FROM THE WORD LANDSLIDE, GUESS THESE WORDS:**

- \_\_\_\_\_ - found along shore lines
- \_\_\_\_\_ - partners
- \_\_\_\_\_ - pin ; spike
- \_\_\_\_\_ - lazy
- \_\_\_\_\_ - to borrow
- \_\_\_\_\_ - local
- \_\_\_\_\_ - a toll
- \_\_\_\_\_ - small valley
- \_\_\_\_\_ - land form
- \_\_\_\_\_ - auction
- \_\_\_\_\_ - playground thing
- \_\_\_\_\_ - cruise
- \_\_\_\_\_ - burden; load
- \_\_\_\_\_ - lifeless
- \_\_\_\_\_ - include
- \_\_\_\_\_ - guide
- \_\_\_\_\_ - women
- \_\_\_\_\_ - garland



**HELP!**  
**UNSCRAMBLE ME,**  
**PLEASE!**

**ADDEILLNS – disaster**

**EELONRTUV- unpaid helper**

**ADEIRSST – tragedy**

**AEIILNRSTUVY-whole world**

**AHIMNTUY – people**

**AAIIILMPRTTY – not biased**

**CEEEGMNRY – sudden event**

**EEIMNNNORTV - surroundings**

**AAEGGLNU – words(LANGUAGE)**

**AAEEHKQRTU - tremor**

**AEILNRTTUY – detachment**

**AEE HGMMMNOOPRSTY – medical tool**

**CDDEEEEINNNP – liberty**

**DEEGKLNOW – facts ; data**

**CCEEIILRTTY – current**

**AEGGHOPRY – natural features**

**BCEEILRTY – icon**

**DEHHOOLSU - family**









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