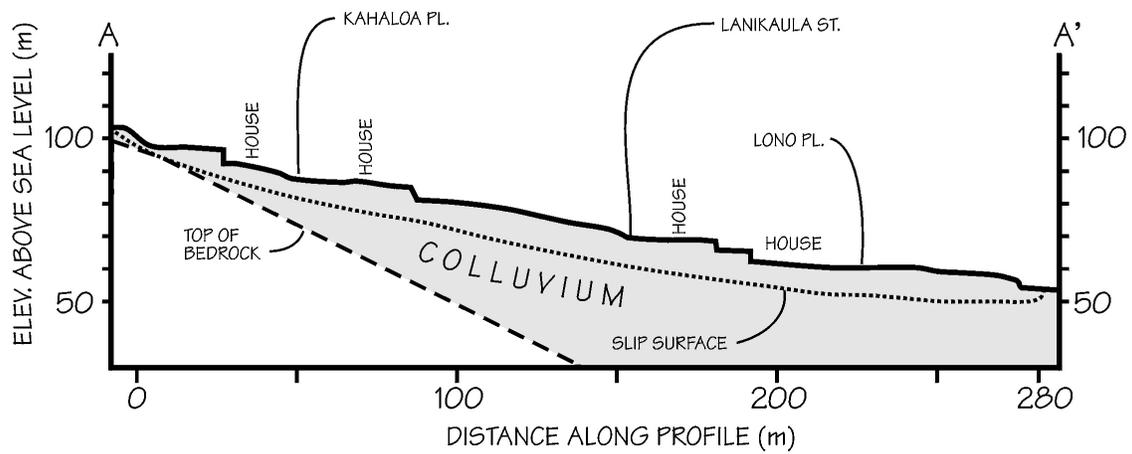
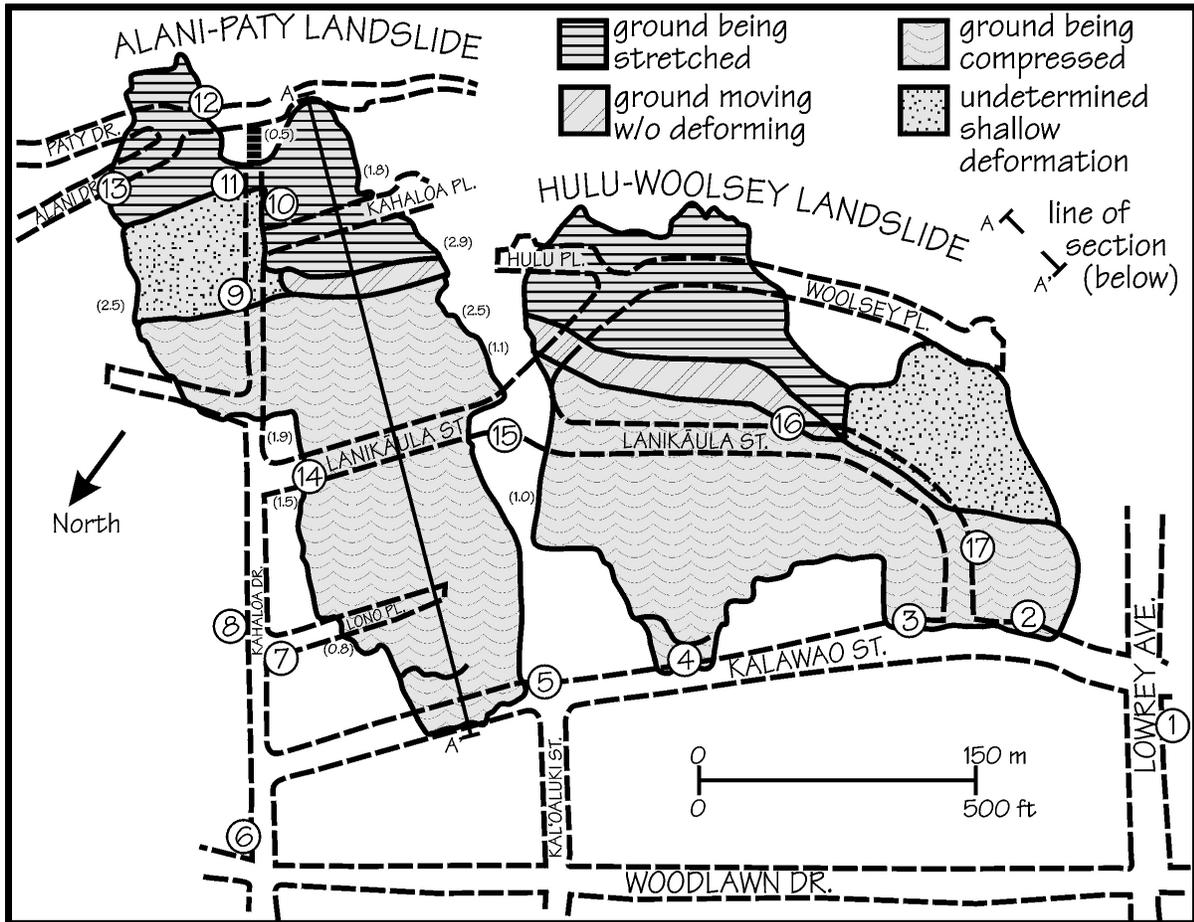


Manoa Landslides Field Study

Map and Cross Section



Manoa Landslides Field Study

Introduction The steep slopes of many of O‘ahu’s valleys are subject to continual landslide problems due to a combination of soil conditions and heavy rains. Landslides can occur suddenly and quickly or slowly over a long period of time. We will visit a slow landslide area in Mānoa Valley, observe the effects of living in such an active geologic area, and discuss what has been done to mitigate the damage. This is an example of how people play an active part in the earth system and of their attempts to control earth processes. Please remember that this landslide problem has been very unpleasant for the homeowners. Be polite and unobtrusive.

The route: The general route is as follows. Starting at Faculty Housing, head up-valley on Kalawao St. Turn left on Kalo‘aluki St. Turn right on Woodlawn Dr. Turn right on Kahaloa Dr. and head to the very top (it becomes stairs). Look at a few things near the intersection of Paty Dr. and Alani Dr. Head back down Kahaloa Dr. Turn left on Lanikāula St. and work your way back down to Kalawao St. Turn left to return to Faculty Housing.

Indicators of a Landslide: Evidence of land movement may not be obvious, *nor does any single piece of evidence stand on its own as indisputable proof of a landslide.* As you walk through this lab, discuss what you notice that might be evidence of landslide activity, answering questions about each location as you go. Also, as you go, list below at least 8 indicators (either natural or manmade features) of a landslide. Beside each indicator, give an alternate non-landslide reason.

Indicator	Stop #	Non-landslide explanation
(example) cracks in sidewalks	27	pressure from tree roots.

1. _____
2. _____
3. _____
4. _____

Map Stops – Numbers refer to stops on map. Some stops will be not be covered on field study.

Stop 2. What do you notice about the little strip of grass between the sidewalk and the gutter?

Stop 5. The roadmap doesn't show this continuation of Kalawao St. as Private, but the sign does. Make a sketch of what you see.



- A. How has the situation changed since the map was made?

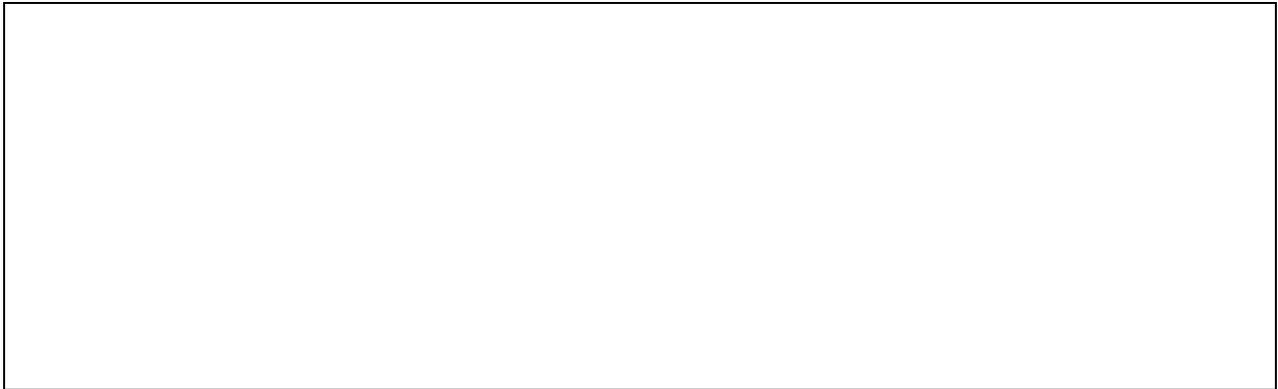
- B. What features indicate the house is not in the same place it was?

- C. Estimate (using a tape measure) how much lateral movement has occurred.

Stop 6. Look up Kahaloa Dr. What's going on with the telephone poles on the upper part?

Stop 11. Did these folks find a good bargain on downspouts, or is there a reason they're so long?

Stop 12. Look at the garage associated with 3103 Paty Dr. and make a sketch of it and the nearby area. Include and label any possible landslide indicators. Observe the driveway and yard. BE CAREFUL OF TRAFFIC!



Does this house appear safe and livable? What hazards do you see?

Look down street, back towards the stairs. What are the indications that this area has been sliding?

Stop 17. What evidence of a continuous landslide do you notice here (garage of 3017 Lanikāula St.)? Would you park in this garage or play on in the yard above the roof?

Extension Questions and Assignments

1. In many of the empty lots it looks as if somebody planted plants. What purpose might foliage such as bushes, plants, and trees serve with respect to landslide protection efforts?

2. If you were the City & County of Honolulu Planner, and you were elected when this subdivision was half-finished, what would you do? Take the following questions into consideration.

- A. Would you continue to build?
- B. What would you have to consider in your decision?
- C. Whose responsibility (financial) is it if the landslide destroys houses?
- D. Who is responsible for fixing roads, water pipes, and service poles?