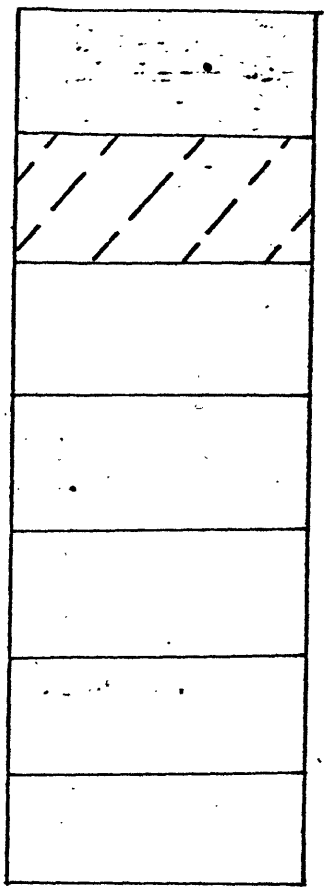
U. S. Geological Survey
OPEN FILE MAP 74-236.

(P.H E)

Landslides per square mile



Landslide

4

Contour, showing landslides per square mile

This map depicts the distribution and density of landslides in the Pittsburgh East quadrangle. It should serve as a supplemental map to be used in conjunction with "Landslide susceptibility map of the Pittsburgh East 7-1/2' quadrangle, Allegheny County, Pennsylvania" (Pomeroy, 1974). Landslides considered to be prehistoric and rockfalls have not been considered in this compilation.

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The user of the map should bear in mind that the map has been based on an interpretation of large-scale (1:12,000) 1973 aerial photographs supplemented by about 10 days of field work in early 1974. Many small landslides undoubtedly have been overlooked. A more thorough landslide inventory would require many weeks or months of effort in the quadrangle.

The map was prepared from a cronoflex grid consisting of 1-mile (1.6 km) squares which was placed over the companion map (Pomeroy, 1974). A clear plastic circle cut to the size equivalent to 1 square mile (2.6 km²) was placed at each grid intersection and also at the center of each square formed by the lines of the grid. The total number of landslides within the circle at each of the two positions was recorded. Contours or lines connecting points of equal numbers were then drawn. This technique has been utilized most recently by Bryant and Reed (1972) although the latter map has no relation to landslides. As mentioned in the previous reference, the method tends to produce a bullseye effect with high values at the counting center even though the immediate area does not necessarily reflect such a density.

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It is apparent from the map that the greatest concentration of landslides per square mile within the quadrangle occurs north of the Golden Triangle. Less major concentrations occur in the Washington Boulevard and Ninemile Run areas. Large areas in the quadrangle show less than one landslide per square mile. However, it is not to be construed from this map that these areas are reasonably "safe" areas where poor engineering practices can be tolerated in any new construction without affecting the slope stability. Conversely, areas showing a high density of landslides per square mile are not necessarily areas where new construction should be halted or curtailed. In many cases such a high density of landslides is a result of a lack of sound engineering planning at a particular development. An overwhelming majority of landslides in Allegheny County have resulted from man-induced changes on unstable slopes as discussed by Briggs (1974).

References cited

Briggs, R. P., 1974, Map of overdip slopes that can affect landsliding in Allegheny County, Pennsylvania: U.S. Geol. Survey Misc. Field Studies Map MF-543.

Bryant, Bruce, and Reed, J. C., Jr., 1972, Map showing approximate density of houses in the Evergreen quadrangle, Jefferson County, Colorado: U.S. Geol. Survey Misc. Geol. Inv. Map I-786-D.

Pomeroy, J. S., 1974, Landslide susceptibility map of the Pittsburgh East 7-1/2' quadrangle, Allegheny County, Pennsylvania: U.S. Geol. Survey open-file report.

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