Open File 77-246

Preliminary reconnaissance map showing landslides in Butler County, Pennsylvania

by John S. Pomeroy

This map depicts landslides in Butler County. Intensive interpretation of 1975 aerial photographs (scale 1:24,000) was supplemented by two weeks of field reconnaissance in late 1975 and early 1976. The soil survey of Butler County (U. S. Soil Conservation Service, 1972), though incomplete, was also used as a source of data. B. A. Breisch, SCS, Butler, informed me of several landslides that I had not known about.

The purpose of this map is to identify areas with potential slope-stability problems significant to development; it is a guide to areas of past and present landslide activity. The map is not designed to replace detailed geological and engineering studies of specific sites by competent technical personnel, but rather, it delineates areas where such detailed studies would be most vital to the safety and welfare of the general public. In these areas, site examinations are necessary in order to determine the degree of difficulty that slope instability may pose to a contemplated land use, and so to define whether costs of hazard prevention are commensurate with the value of the contemplated use.

Because the present investigation was strictly reconnaissance in nature and because most slides are too small to be discerned from the aerial photography, this map does not purport to show all recent landslides.

Furthermore, many slopes not designated as containing older landslides undoubtedly include older landslides the geomorphic evidence for which has been obliterated by erosion or modified by man. Hence, differentiation of such areas on the map is difficult.

For more information regarding landslide map features, diagrams, recommendations, and advice for the non-technical reader the user of this map is urged to refer to Briggs, Pomeroy, and Davies (1975) and Pomeroy and Davies (1975). A discussion of the geology of the County is found in Patterson and Van Lieu (1971). Butler County is an integral part of a recent 1:125,000 scale geologic map of the Greater Pittsburgh region (Wagner et al, 1975).

References Cited

Briggs, R. P., Pomeroy, J. S., and Davies, W. E., 1975, Landsliding in Allegheny County, Pennsylvania: U. S. Geol. Survey Cir. 728, 18 p.

Patterson, E. G., and Van Lieu, J. A., 1971, Coal resources of Butler County, Pennsylvania: U. S. Geol. Survey Bull. 1143-C, 43 p.

Pomeroy, J. S., and Davies, W. E., 1975, Map of susceptibility to landsliding, Allegheny County, Pennsylvania: U. S. Geol. Survey Misc. Field Studies Map MF-685B, 2 sheets w/text.

U. S. Soil Conservation Service, 1972, Soil survey map and interpretation for developing areas in Butler County, Pennsylvania: Pa. Dept. Environmental Resources, State Conservation Commission, 116 p.

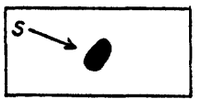
Wagner, W. R., Craft, J. L., Heyman, L., and Harper, J. A., 1975: Greater Pittsburgh region geologic map and cross sections: Pa. Geol. Survey Map 42, 6 pls.

EXPLANATION

(BUTLER CO.)

Younger Landslides

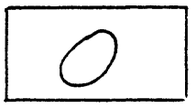
Younger landslides, well-defined, may still be active, includes the most recent landslides characterized by fresh scars.



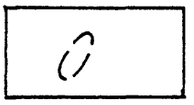
Arrow and darkened area indicate younger landslide. Examples of earthflow (E), slump (S), glacial slump (GS), fill slump (FS), and mining related slides (M) are shown. Some interpreted slides were not investigated and are indicated by (U).

Older Landslides

Represented by individually mapped bodies or extensive slope areas. Most of the designated older landslide areas do not represent single events but are accumulations of landslide deposits that probably occurred during and immediately after Wisconsin glaciation. Older landslides may be presently stable but are often sensitive to modification by man and can be reactivated by excavation, loading, and changes in ground-water and surface-water conditions.



Older landslides, definite to somewhat less definite, conspicuous to slightly subdued hummocky and/or bulgy surfaces, boundaries approximate



Older landslides, probable to possible, fair to poorly defined, boundaries inferred; evidence is less distinct than for previous category.

Co). Landslides. 1:62,000. 1977

77-246 M