U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

Prepared in cooperation with
THE CITY AND COUNTY OF HONOLULU

OPEN-FILE REPORT
93-514
PLATE 2

EXPLANATION

Soil slips and debris flows first observed on photographs flown in year indicated. See appendix for dates and areal coverage of photography

1952
- Soil-slip scar
- Debris-flow travel path
- Path traveled by successive debris flows mapped in 1952 and 1968 photographs
- Cluster of scars and travel paths

Mappable landslide, possibly of weathered bedrock (saprolite)

1958
- Soil-slip scar
- Debris-flow travel path

1959
- Soil-slip scar
- Debris-flow travel path

1963
- Soil-slip scar
- Debris-flow travel path
- Cluster of scars and travel paths mapped in 1963 and 1965 photographs

1965
- Soil-slip scar
- Debris-flow travel path
- Cluster of scars and travel paths mapped in 1963 and 1965 photographs

1966
- Soil-slip scar
- Debris-flow travel path

1967
- Soil-slip scar
- Debris-flow travel path
- Cluster of scars and travel paths

1968
- Soil-slip scar
- Debris-flow travel path
- Path traveled by successive debris flows mapped in 1952 and 1968 photographs

1969
- Soil-slip scar
- Debris-flow travel path

1969-1970
- Soil-slip scar
- Debris-flow travel path

1978
- Soil-slip scar
- Debris-flow travel path
- Cluster of scars and travel paths

1980
- Soil-slip scar
- Debris-flow travel path
- Cluster of scars and travel paths

1988 (following New Year's Eve storm of 1987-1988)
- Soil-slip scar
- Debris-flow travel path
- Cluster of scars and travel paths
- Scar from deep landslide of weathered bedrock (saprolite)
- Crack bounding probable incipient deep landslide of weathered bedrock (saprolite)

1989
- Soil-slip scar
- Debris-flow travel path
- Cluster of scars and travel paths

Area of pronounced aeolian effects, typically including deflation pits and dunes

Boundary of study area

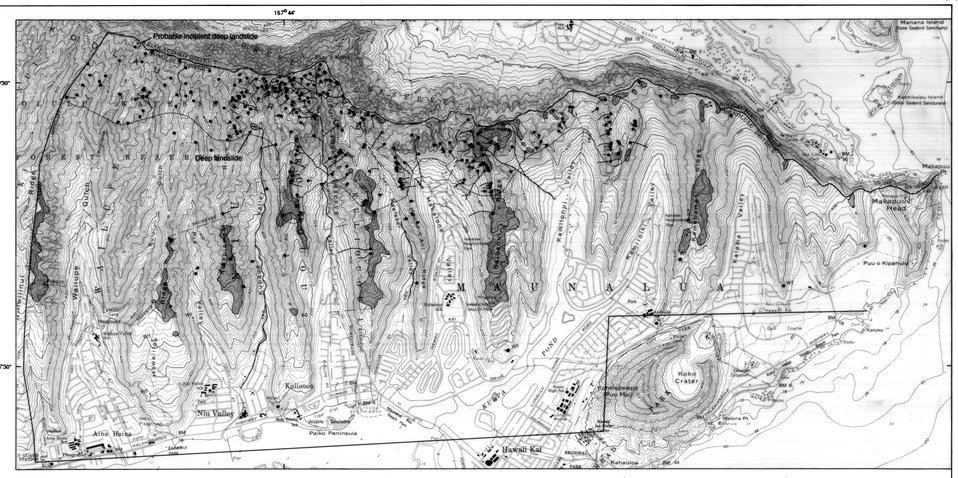
EXPLANATION

Soil slips and debris flows produced by the New Year's Eve storm. Includes only features of certain identification, excluding those from cut or fill slopes, mapped by Ellen and others (1991)
- Soil-slip scar
- Scar from deep landslide of weathered bedrock (saprolite)
- Crack bounding probable incipient deep landslide of weathered bedrock (saprolite)
- Debris-flow travel path

Area of pronounced aeolian effects, typically including deflation pits and dunes

Boundary of 1988 cluster shown on main map

Boundary of area mapped by Ellen and others (1991) within Honolulu District


Probable incipient deep landslide
Deep landslide
Makapuu Head
Kalanianaole Hwy
Kuliouou
Nuuanu Pali
Nuuanu Valley
Waiupe
Nuuanu Reservoir No. 1
Nuuanu Reservoir No. 2
Manana Island
Bird Sanctuary
Kaohikaipu Island
Bird Sanctuary
Puu o Kipapalua
Kaiwi Channel
Kuliouou Ridge
Kuliouou Valley
Kuliouou Stream
Kuliouou Peak
Kuliouou Reservoir
Kuliouou Ridge Trail
Kuliouou Valley Trail
Kuliouou Stream
Waiupe Valley
Waiupe Ridge
Waiupe Stream
Waiupe Peak
Waiupe Valley Trail
Waiupe Ridge Trail
Waiupe Stream
Kaiwi Ridge
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