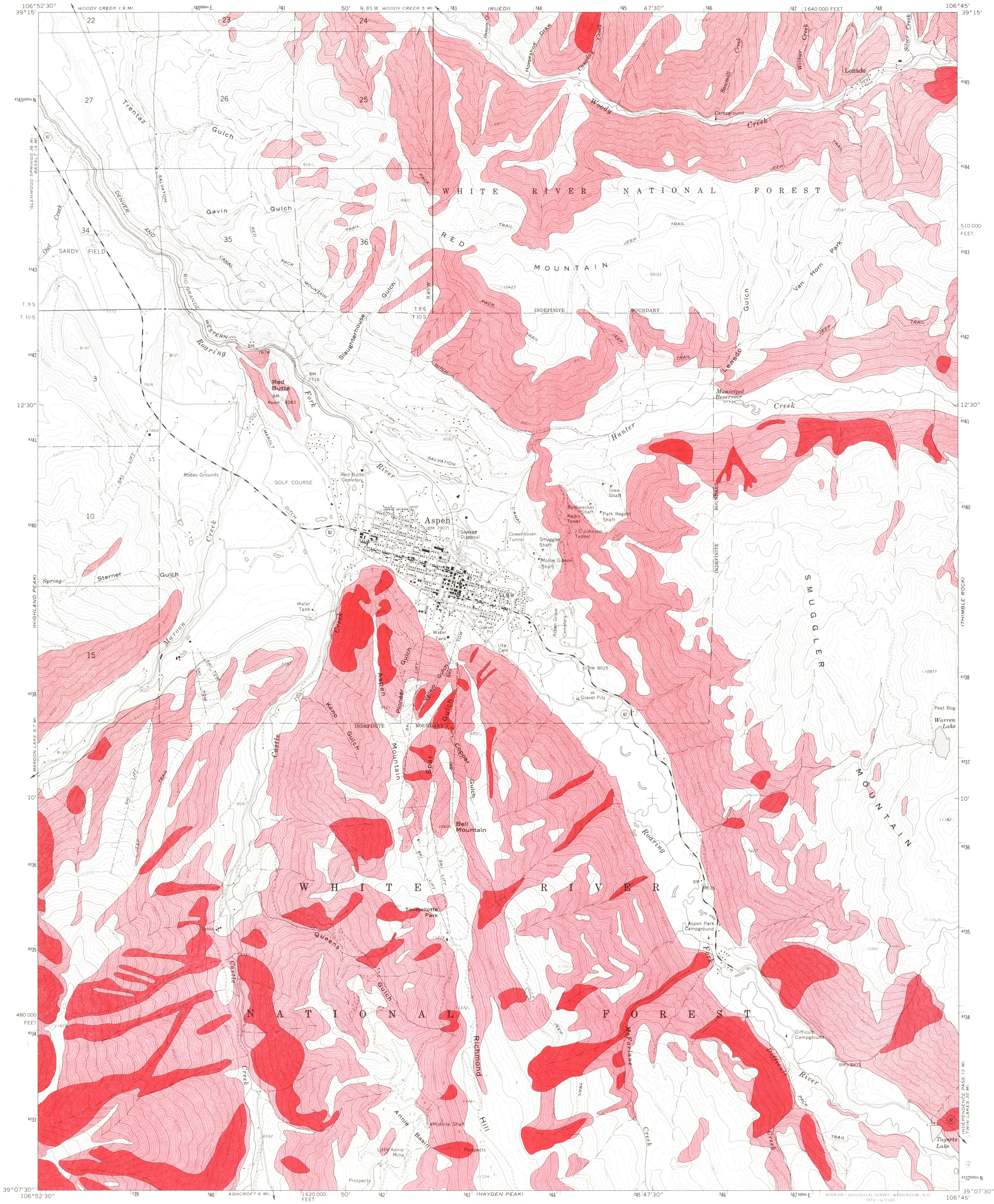
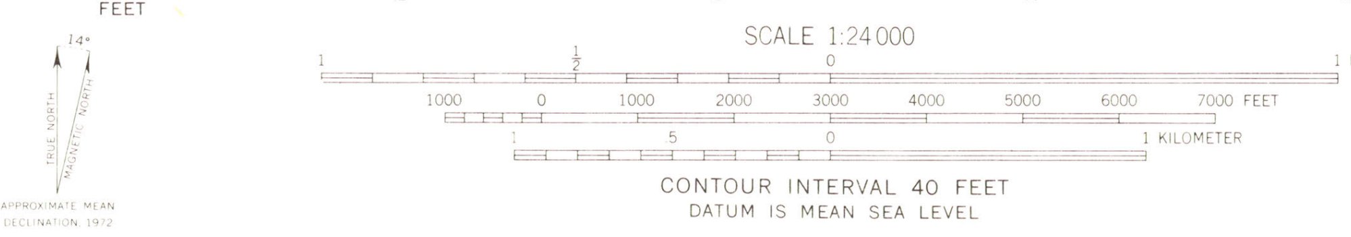
DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

FOLIO OF THE
ASPEN QUADRANGLE, COLORADO
MAP I-785-G



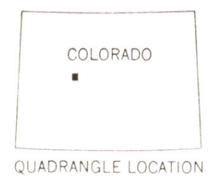
INTERIOR—GEOLOGICAL SURVEY, WASHINGTON, D.C. 1972—G72385

Base from U.S. Geological Survey, 1960
10,000-foot grid based on Colorado coordinate system, central zone
1000-meter Universal Transverse Mercator grid ticks, zone 13



SCALE 1:24 000

CONTOUR INTERVAL 40 FEET
DATUM IS MEAN SEA LEVEL



QUADRANGLE LOCATION

Information in part furnished by R. H. Cerise, P. I. Hauk and J. E. Burns, U.S. Forest Service

EXPLANATION

🟥 **Avalanche area**

▨ **Slopes steep enough for small avalanches under certain conditions; and areas directly below avalanche areas**

NOTES

Steep mountain country with abundant snowfall and wind is subject to snow avalanches that may destroy life and property in their paths. The terrain of the Aspen quadrangle ranges from the relatively gentle valley of the Roaring Fork River northwest of Aspen, an area of moderate snowfall and considerable winter melting where avalanches very rarely, if ever, occur, to rugged areas above timberline in the southwest corner of the quadrangle where there are heavy snowfall, much drifting, and steep slopes, and where avalanches occur every winter.

Avalanches occur at conditions under which snow is unstable. They most commonly occur on slopes of 30°-45° (60-100 percent), but they have been known to occur on slopes as low as 15° (27 percent) and as high as 60° (175 percent). On steeper slopes insufficient snow accumulates for avalanches to form. Open grassy slopes hold the snow the poorest; wooded slopes the best. Snow accumulates on the leeward side of ridges, making those areas more favorable for avalanches. The most dangerous avalanche conditions exist during or immediately after heavy snowfalls or during a time of rapid change in temperature, humidity and wind, all of which may cause adjustment in the snowpack.

This map was made from information shown on aerial photographs and the topographic map. The most obvious avalanche paths are in gullies or on steep treeless slopes below timberline. Some paths, which do not run as frequently, are outlined by elongate areas of small aspen, which contrast with adjacent areas of more mature trees. Other areas of avalanche danger shown on this map are on steep slopes with sparse vegetation. Although avalanches tend to use the same paths year after year, they may modify and expand their paths by destroying mature forest, or they may even establish new paths in years of particularly heavy snowfall.

Avalanche danger exists at certain snow and temperature conditions in wooded areas on steep slopes. Small avalanches in such areas are hazardous to the winter traveler, although they may not be large enough to destroy trees. In 1961 one person perished in a small avalanche in a small opening in the trees on a 33.5° (66 percent) slope in the Aspen Mountain ski area. The avalanche ran only 90 feet. Deep new snow overlay an old crusty base (U.S. Forest Service, 1967).

Areas shown on the map as *slopes steep enough for small avalanches under certain conditions* include those in which accidents could occur. Much of the area shown is thickly wooded, which tends to inhibit avalanching, but small avalanches may nevertheless occur. The areas outlined on the map include most slopes steeper than about 45 percent on which avalanches could occur under the right conditions as well as a few cliffs where snow does not accumulate.

In this map unit the higher north- and east-facing slopes would more frequently have conditions favorable for small avalanches, whereas the lower south- and west-facing slopes would seldom, if ever, have such conditions. Areas on the east side of Richmond Hill where timber is sparse or absent would be most likely to have conditions favorable for avalanches, for the prevailing winds are from the west and snow drifting from the broad crest of Richmond Hill accumulates on the partly open and grassy slopes to the east.

In steep mountain terrain the best routes for the winter traveler are on ridges away from cornices that might have formed on the leeward side, or in the middle of broad valley bottoms. The U.S. Forest Service has made extensive study of conditions favoring avalanches, and they are ready to advise the winter traveler of the avalanche potential at any time.

Within the marked boundaries of ski areas, slopes on which avalanches may form are carefully watched, and those slopes are closed at times of avalanche danger until checked and the hazard elimintated.

REFERENCES

U.S. Forest Service (Gallagher, Dale, ed.), 1967, The snowy torrents – Avalanche accidents in the United States, 1910-1966: U.S. Forest Service, Alta Avalanche Study Center, 144 p.

U.S. Forest Service, 1968, Snow avalanches – A handbook of forecasting and control measures: U.S. Forest Service, Agriculture Handb. 194, 84 p.

________ 1970, Snow avalanche – General rules for avoiding and surviving snow avalanches [leaflet].

MAP SHOWING AVALANCHE AREAS IN THE ASPEN QUADRANGLE, PITKIN COUNTY, COLORADO

By

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1972

~~Colorado (Aspen quad). Geol. 1:24,000. 1972.~~
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