**UTAH GEOLOGICAL SURVEY**
*a division of*
**Utah Department of Natural Resources**
*in cooperation with*
**Bryce Canyon Association**
*and* **National Park Service**

**Plate 3**
**Utah Geological Survey Special Study 178**
**Bryce Canyon National Park Geologic-Hazard Study Area**

# FLOOD AND DEBRIS-FLOW HAZARD
# BRYCE CANYON NATIONAL PARK AND VICINITY
# GARFIELD AND KANE COUNTIES, UTAH

by

Tyler R. Knudsen

2026

## EXPLANATION

**VH** — **Very High Flood Hazard –** Very high flood hazard on active flood plains and low terraces along perennial streams (large drainage basins [greater than or equal to 5 mi$^2$ (≥ 13 km$^2$)]) subject to riverine and flash flooding and accompanying erosion, active alluvial fans subject to flash floods and debris flows, and slot canyons containing perennial streams that are periodically inundated by flash floods and debris flows, which may occur in response to distant thunderstorms. Also includes larger ephemeral drainages subject to large-volume floods during localized thunderstorms or during prolonged precipitation events. Many of the geologic deposits in this category coincide with stream segments covered by Federal Emergency Management Agency flood zones.

**H** — **High Flood Hazard –** High flood hazard in stream channels, flood plains, and low terraces along normally dry ephemeral streams (smaller drainage basins [less than 5 mi$^2$ (< 13 km$^2$)]) that are periodically inundated by flash floods and debris flows during thunderstorms, and slot canyons containing perennial streams that are periodically inundated by flash floods and debris flows during thunderstorms in their smaller drainage basins. Some geologic deposits in this category may coincide with stream segments covered by Federal Emergency Management Agency flood zones.

**M** — **Moderate Flood Hazard –** Moderate flood hazard on active pediments and sloping depositional surfaces flanking ridges and other upland areas that are chiefly inundated by sheetfloods, but possibly by flash floods and debris flows during thunderstorms, older alluvial-fan deposits, and colluvial and landslide deposits on mountain slopes and along mountain range fronts. Includes minor (typically less than 2 mi$^2$ [< 5 km$^2$]) tributary ephemeral drainages and active depositional surfaces flanking ridges, benches, and other upland areas that may be inundated by sheetfloods and moderate flash floods during thunderstorms.

**L** — **Low Flood Hazard –** Low flood hazard on valley bottoms, and minor ephemeral drainages, swales, washes, and other low-lying areas subject to possible sheetfloods and minor flash floods from adjacent upland areas during thunderstorms.

**Bryce Canyon National Park boundary**

*The Utah Department of Natural Resources, Utah Geological Survey, makes no warranty, expressed or implied, regarding the suitability of this product for a particular use, and does not guarantee accuracy or completeness of the data. The Utah Department of Natural Resources, Utah Geological Survey, shall not be liable under any circumstances for any direct, indirect, special, incidental, or consequential damages with respect to claims by users of this product. For use at 1:24,000 scale.*

*This mapping was funded by the Utah Geological Survey and the Bryce Canyon Association, and facilitated by the National Park Service, U.S. Department of the Interior. The views and conclusions contained in this document are those of the author and should not be interpreted as necessarily representing the official policies, either expressed or implied, of the Bryce Canyon Association or the U.S. Government. These maps and explanatory information are submitted for publication with the understanding that the Bryce Canyon Association and the U.S. Government are authorized to reproduce and distribute reprints for their use.*

SCALE 1:24,000

1 0.5 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

APPROXIMATE MEAN DECLINATION, 2026

7.5' Quadrangle Index

Wilson Peak | Bryce Canyon | Tropic Canyon
Tropic Reservoir | Bryce Point | Cannonville
Podunk Creek | Rainbow Point | Bull Valley Gorge

Map Location

Base from USGS US Topo Bryce Canyon, Tropic Canyon, Tropic Reservoir, Bryce Point, Cannonville, Podunk Creek, and Rainbow Point 7.5' Quadrangles (2020)
Projection: UTM Zone 12
Datum: NAD 1983

Project Manager: Steve Bowman
GIS and Cartography: Tyler Knudsen, Gordon Douglass, and Kristi Rasmussen

**Utah Geological Survey**
1594 West North Temple, Suite 3110
Salt Lake City, UT 84116
(801) 537-3300
geology.utah.gov

This map was created from geographic information system (GIS) data.

https://doi.org/10.34191/SS-178