

SHALLOW GROUNDWATER SUSCEPTIBILITY BRYCE CANYON NATIONAL PARK AND VICINITY GARFIELD AND KANE COUNTIES, UTAH

by
Tyler R. Knudsen
2026

EXPLANATION

- S1

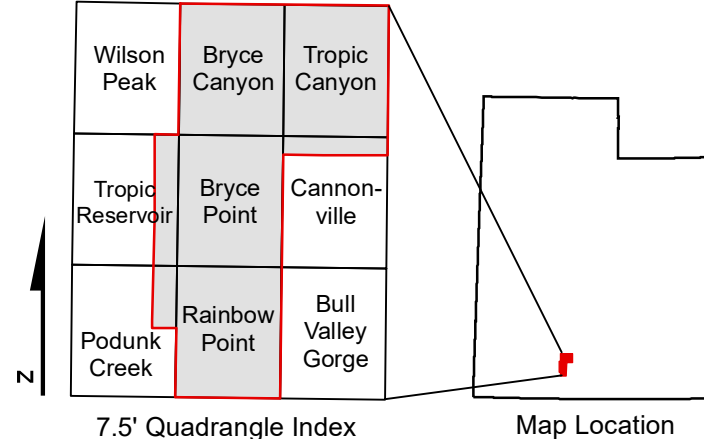
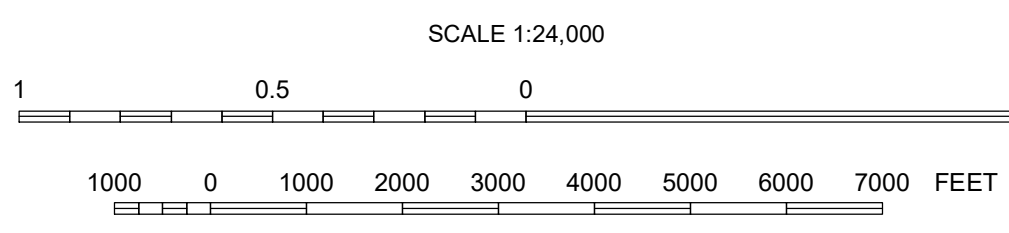
Shallow Groundwater Unit 1 – Areas identified as potentially having shallow groundwater or developing shallow groundwater. Includes naturally wet soils mapped by the Natural Resources Conservation Service as having a groundwater depth less than or equal to 5 feet (≤ 1.5 m) and soils classified as poorly drained or frequently irrigated where water well or geotechnical data indicates a significant area of permanent shallow groundwater (less than or equal to 10 feet (≤ 3 m)). Also includes areas where field observations indicate shallow groundwater, for example wetlands, springs, vegetation. Construction in these areas will likely encounter shallow groundwater at depths less than or equal to 10 feet (≤ 3 m), and basements and other water-sensitive underground facilities are not recommended without adequate drainage or other protection. Urbanization, development, landscape irrigation, wastewater disposal, and other sources of urban runoff may cause groundwater levels to rise even higher in these areas.
- S2

Shallow Groundwater Unit 2 – Poorly drained, generally fine-grained soils mapped by the Natural Resources Conservation Service that may develop shallow groundwater locally when rates of water application exceed the soil's drainage capacity or geotechnical data indicates groundwater at depths of 10 to 50 feet (3–15 m) below the surface. Subsurface drains are frequently required to prevent these soils from becoming saturated. Because these soils naturally drain slowly, they may remain wet for most of the year, even though water is applied only during the growing season. Permanent shallow groundwater is possible following urbanization or development.
- S3

Shallow Groundwater Unit 3 – Moderately to freely draining soils mapped by the Natural Resources Conservation Service that are commonly irrigated for agricultural purposes or where geotechnical data indicates no shallow groundwater 50 feet (15 m) below the surface and where no geotechnical data are available. Where high rates of water application occur, these soils may develop seasonally shallow groundwater, but typically drain quickly once water application stops or is reduced below the soil's drainage capacity. Seasonal or transient shallow groundwater is possible especially following urbanization or development; landscape irrigation, wastewater disposal, and other sources of urban runoff may cause groundwater levels to rise even higher in these areas.
- Bryce Canyon National Park boundary**

The Utah Department of Natural Resources, Utah Geological Survey, makes no warranty, expressed or implied, regarding the accuracy 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 published 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 reports for their use.



Base from USGS 1:250,000 US Topographic Maps, Bryce Canyon, Tropic, Panguitch, Big Water, Cannonville, Panguitch, Tropic, and Big Water, Utah, 1984. Projection: UTM Zone 12, Datum: NAD 83.

Project Manager: Steve Bowman
GIS and Cartography: Tyler Knudsen, Gordon Douglas, and Ross Rasmussen

Utah Geological Survey
1504 West North Street, Suite 1110
Salt Lake City, UT 84116
(801) 537-3300
geosurvey@utah.gov

This map was created from geographic information system (GIS) data.
<https://doi.org/10.34191/SS-178>