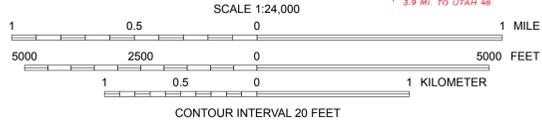


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Base from USGS Magna 7.5' Quadrangle (1999)  
Hillshade derived from 2-meter bare earth LIDAR (2006) data from the Utah Automated Geographic Reference Center  
State Geographic Information Database  
Projection: UTM Zone 12  
Datum: NAD 1983  
Spheroid: Clarke 1886  
GIS and Cartography: Jessica J. Castleton and Corey D. Under

**EXPANSIVE SOIL AND ROCK SUSCEPTIBILITY MAP OF THE  
MAGNA QUADRANGLE, SALT LAKE COUNTY, UTAH**  
by  
**Ashley H. Elliott, Jessica J. Castleton, and Greg N. McDonald**  
2011



1	2	3
4	5	6
7	8	

1. Antelope Island South  
2. Baileys Lake  
3. Salt Lake City North  
4. Farnsworth Peak  
5. Salt Lake City South  
6. Bingham Canyon  
7. Copperton  
8. Midvale

ADJOINING 7.5' QUADRANGLE NAMES

**EXPLANATION**

- Not Mapped** – Areas not mapped due to significant and ongoing human disturbance.
- EXPANSIVE SOIL AND ROCK SUSCEPTIBILITY**
- High** – Soils classified by the U.S. Natural Resources Conservation Service (NRCS) as having a high potential for volumetric change (linear extensibility >6%); includes geologic units mapped by Solomon and others (2007) in which geotechnical testing indicates an abundance of expansive clay minerals (swell/collapse test [SCT] values greater than or equal to 3% and/or liquid limit [LL] values greater than or equal to 45, and plasticity index [PI] values greater than or equal to 20).
- Moderate** – Soils classified by the NRCS as having moderate susceptibility for volumetric change (linear extensibility 3–6%); includes interbedded Lake Bonneville deposits mapped by Solomon and others (2007) in which geotechnical borehole logs indicate thick expansive clay layers are present. Typically, these units have an SCT of 2–3% and/or an LL of 20–40 and a PI of 10–30.
- Low** – Soils classified by the NRCS as having low potential for volumetric change (linear extensibility 0–3%); includes geologic units dominated by sand and gravel mapped by Solomon and others (2007) in which geotechnical testing indicates a lack of expansive clay minerals (SCT values of 0–2% and/or an LL of 0–30, and a PI of 0–15).

**USING THE MAP**

This map shows the location of known or suspected expansive soil and rock in the Magna quadrangle. The presence and severity of expansive soil and rock along with other geologic hazards should be addressed in site-specific geotechnical/geologic-hazard investigations. This map is not intended for use at scales other than 1:24,000, and is designed for use in general planning to indicate the need for site-specific geotechnical/geologic-hazard investigations. Site-specific geotechnical/geologic-hazard investigations can resolve uncertainties inherent in generalized mapping and help ensure safety by identifying the need for special foundation designs, mitigation and/or construction techniques.

For additional information about expansive soil and rock in the Magna quadrangle, refer to Chapter 7 of the accompanying report.