2023 Utah Landslide Hazards Update



April 2023 Kolob Canyon Rockfall/Landslide

May 2023 Pleasant View

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DNR

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Landslides 2023 – by the numbers

>20 emergency responses ~400 staff hours in last 6 weeks ~100 that we know about, many more that we don't know about, probably orders of magnitude more ~1000 photos archived in 2023 alone ~5 drone videos (maybe more) KSL Chopper 5 - twice 2 homes collapsed (+1 razed by the city) Countless media interviews-TV, radio, press 3 geologists plus support staff



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Drabel

Layton

geology.utah.gov

werse Mtr

All landslides are not the same



Rock formation (slope) failure







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All landslides are not the same





Cove Canyon 2023

Translational (Loose sediment) failure

Bedrock failure



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Common Causes

- Soil type
- Too much water/moisture
- Weight added
- "Toe" cut out
- Modifications while wet
- Overly steep slopes
- Burn scars



2023 UGS Landslide Emergency Responses

- Box Elder County
 Willard
- Cache County
 Logan
- Davis County
 Fruit Heights
 Layton Area*
- Iron County
 State Route 14/Coal Creek*
- Kane County
 State Route 9
- Morgan County

 Mountain Green Area*
 Trappers Loop Road*
- Rich County
 - North Cisco Road*

- Salt Lake County
 O City Creek Canyon*
 - Emigration Canyon*
 - Parleys Canyon*
- Summit County
 - o Cove Canyon
 - o Marriott Mountainside
- Utah County
 - Springville Subsidence
- Washington County
 - o Truman Drive
 - Zion National Park*
- Weber County
 - Various locations
- * denotes multiple landslides

2023 UGS Landslide Reconnaissance and Monitoring

Park City Resort Base Area Landslide

One of Several Landslides in the Layton Area

100+ known landslides across the state

Fishlake National Forest

St Georg

Mesquite

Dixie National Forest

> Clen Canyon National Recreation Area

information about Uta

Landslide Near Little Dell Reservoir

2023 UGS Landslide Reconnaissance and Monitoring Highlights

> The Virgin River is just beyond the trees.

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New UGS Landslide Current Events Webpage

https://geology.utah.gov/ hazards/landslides/currentevents

Energy & Minerals

Groundwater & Wetlands Hazards

Maps & Publications

GEOLOGIC HAZARDS

HAZARDS HAZARD ASSISTANCE INFORMATION & MAPS

Home / Hazards / Landslides / Current Event

EARTHQUAKES

LANDSLIDES

FLOODING

PROBLEM SOILS AND ROCKS

VOLCANOES

LANDSLIDE CURRENT EVENTS

In Utah, most landslides move slowly, but some move quickly with devastating results. Landslides can be naturally occurring or human-caused. Landslides can result from a rise in groundwater levels caused by increased precipitation, rapid snowmelt, or by human causes, such as excessive landscape irrigation or leakage from reservoirs, ponds, pipelines, etc.

This year, record snowfall and a relatively fast-melting snowpack has increased the possibility of landslide occurrence throughout Utah in landslide-prone areas. This page is dedicated to providing updated geologic information on current landslide events in Utah. Information is subject to update as landslide conditions change and more information becomes available. For emergencies, see emergency information and resources below.

Popular Geology

About Q

2023 Pioneer Gulch Landslide, Emigration Canyon, Salt Lake County, Utah. Photographer: Leon Berrett, Salt Lake County Public Works

Current Landslide Events

SELECT AN EVENT FOR DETAILS

Trappers Loop Bend Landslides, Morgan County

APRIL 22, 2023 Springtime Road Landslide, Draper

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Utah Geological Survey GeoData Archive

The UGS GeoData Archive, part of our Geologic Data Preservation Project, contains Utah geologic- and wetlands-related scanned documents, photographs (except aerial), and other digital materials (resources) from our files and those gathered from other agencies or organizations in one web-based system.

Individual data collections are accessible using the Data Collections links. Resources available to general users are all in the public domain or from the public record. Metadata describing each resource is searchable, along with map searching for resources that are local or site-specific in nature. Users are also encouraged to search the UGS Library for books and similar materials. Upon searching for specific resources, they may be viewed directly, or downloaded to your local device. Not all resources may be available to all users due to copyright and/or distribution restrictions.

Upgrade available

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View version information on the ResourceSpace website

2023 Utah Landslides

Photos and other information about landslides occurring in 2023, including UGS reconnaissance data.

2020 M5.7 Magna EQ

Digital clearinghouse of photographs and other data about the March 2020 earthquake and aftershock sequence.

Map Search

Search for resources using

and bounding box area.

Geologic Response

Geologic emergency an OpenStreetMap basemap response clearinghouses with available data, photos,

1. Upload Search Q All Resources Photo Document Video Audio Vells Observation

2023 UGS Emergency Response Clearinghouses (photos and other data) https://geodata.geology.utah.gov

Clear Search 💮 Map Search Advanced Search

() View New Resources

Powered by

Title

Author

County

ResourceSpace

GEOLOGICAL III Dash Data Collections UGS Website SURVEY	Log In Contact Us
Data Collections > Geologic Hazard Materials > Geologic Emergency Responses > 2023 Geologic Emergency Responses	Search Q
€ 2023 Aerial Reconnaiss Flight	 Photo Document
€ 2023 Emigration Ca Landslides Response	✓ Video✓ Audio
€ 2023 Flooding se	Title
€ 2023 Fruit Heights Landslide Response	Author
2023 Landslide Emergency Response Miscellaneous Photos	County
€ 2023 Layton City Landslides Response	
Contrain Green Area Landslide Response	Keywords
C 2023 Park City Area Landslide Response News	By Date
2023 Parleys Canyon/Interstate 80 Landslides Response	Any year 👻 Any month 💙
	Clear Search
€ 2023 Weber River Area Landslide Response New!	 Map Search Advanced Search
	(9) View New Resources
€ 2023 Springville Subsidence Response	ResourceSpace
2023 Suncrest Area Landslide Response	
€ 2023 Zion National Park Landslide/Rockfall Response	

Fruit Heights Landslide Response Photos

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Report Shallow Groundwater Flooding In Your Home

In the past year, have you experienced groundwater flooding in your basement or * other low lying areas?

Do you have a sump pump removing water from your basement? *

O Yes

No

How much flooding have you experienced in your home? *

Dampness

Less than 1 inch of standing water

More than 1 inch of standing water

Describe your flooding experience, including days, severity, and any additional information.

Your answer

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Why Are We Experiencing More Landslides This Year?

- Record Breaking 2022-2023 Winter Snowfall
 - Leads to Saturated Soils During Snowmelt and Runoff
- Urbanization and Development is Occurring in More Landslide Prone Areas
 - Comprehensive landslide hazard investigations are necessary but are often not performed.
 - Proper site grading and storm drainage (including above cut slopes) are critical.
 - Many communities have not adopted effective geologic hazard and site/lot grading ordinances.

What Can the UGS do?

Improve understanding of landslides and other geologic hazards

- Funding to Support Additional UGS Geologic Hazards Program Geologists
 - Increased Landslide Inventory Mapping (landslide footprints, type, etc.)
 - Increased Mapping of Other Geologic Hazards
 - Increased Technical Outreach to Utah's Local Governments
 - Landslides
 - Earthquakes
 - Shallow Groundwater Flooding
 - Problem Soils
 - Rock Falls

Your support is appreciated

Carbon Sequestration Program	-	-	-	-	-	362,100	-	362,100
Cloud Seeding Program	2,195,800	-	-	-	-	-	-	2,195,800
CO River Basin Water Rights Distribution Priority Schedule	-	-	-	-	-	650,000	-	650,000
Coordinated Water Planning and Conservation	130,000	-	-	-	-	-	-	130,000
Designated Sales Tax Appropriation Correction	-	-	-	-	-	-	303,200	303,200
Emerging Energy Technologies Expert	180.000	-	-	-	-	-	-	180,000
FISH Hatchery Maintenance							-	633,200
,								291,200
Landelide Manning of Litah's Ranidly Growing Areas 11							000	1,205,000
Landshue Mapping of Otari 5 Napidiy Orowing Areas							120,000	
Mineral Lease Fund Increase								628,400
Mineral Lease Fund Increase							_	100,000
Outdoor Recreation Trail Crew	_	-	-	-	-	1,300,000	-	1,300,000
Sovereign Lands Management	-	-	-	-	-	2,000,000	-	2,000,000
State Match for IIJA Grid Resilience Formula Grant	_	-	-	5,860,000	-	_	-	5,860,000
State Parks Campground and Improvements	-	-	-	-	-	250,000	-	250,000
State Parks Operations Cost Increases	_	-	-	-	-	1,500,000	-	1,500,000
State Parks Potail Sales Merchandise						1 750 000		1 750 000

8	DNR	UGS	Groundwater Monitoring and Investigations	Gov	283,200
9	DNR	Water Rights	Groundwater Monitoring and Investigations	Gov	350,000
10	DNR	FFSL	Assistant County Fire Wardens & Vehicles	Gov	215,000
11	DNR	UGS	Landslide Mapping of Utah's Rapidly Growing Areas	Gov	120,000
12	UDAF	Marketing and Development	Livestock Show	RFA	35,000
DNR			LeRay McAllister Critical Lands Conservation		

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What More Can Be Done About Landslides and Other Geologic Hazards?

• Adoption of the UGS Guidelines for Investigating Geologic Hazards and Reviewing Geologic Reports

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- Latest Edition (2020, UGS Circular 122)
- Adoption of the UGS Model Geologic Hazard Ordinance
 - Contained in UGS Circular 122 (Appendix E)
 - Most geologic hazards are not covered in the statewide adopted 2021 International Building Code (IBC) and 2021 International Residential Code (IRC).
- Adoption and Enforcement of Mass Grading Codes/Ordinances Covering Construction Cuts and Fills
- Requiring Local Governments to Submit Geologic Reports to the UGS for Archiving
 - Improves data available for geologic hazard mapping and

investigation.

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GUIDELINES FOR INVESTIGATING GEOLOGIC HAZARDS AND PREPARING ENGINEERING-GEOLOGY REPORTS, WITH A SUGGESTED APPROACH TO GEOLOGIC-HAZARD ORDINANCES IN UTAH SECOND EDITION Steve D. Bowman and William R. Lund, editors

Society can prepare for and deal with geologic hazards.

Questions and Discussion

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